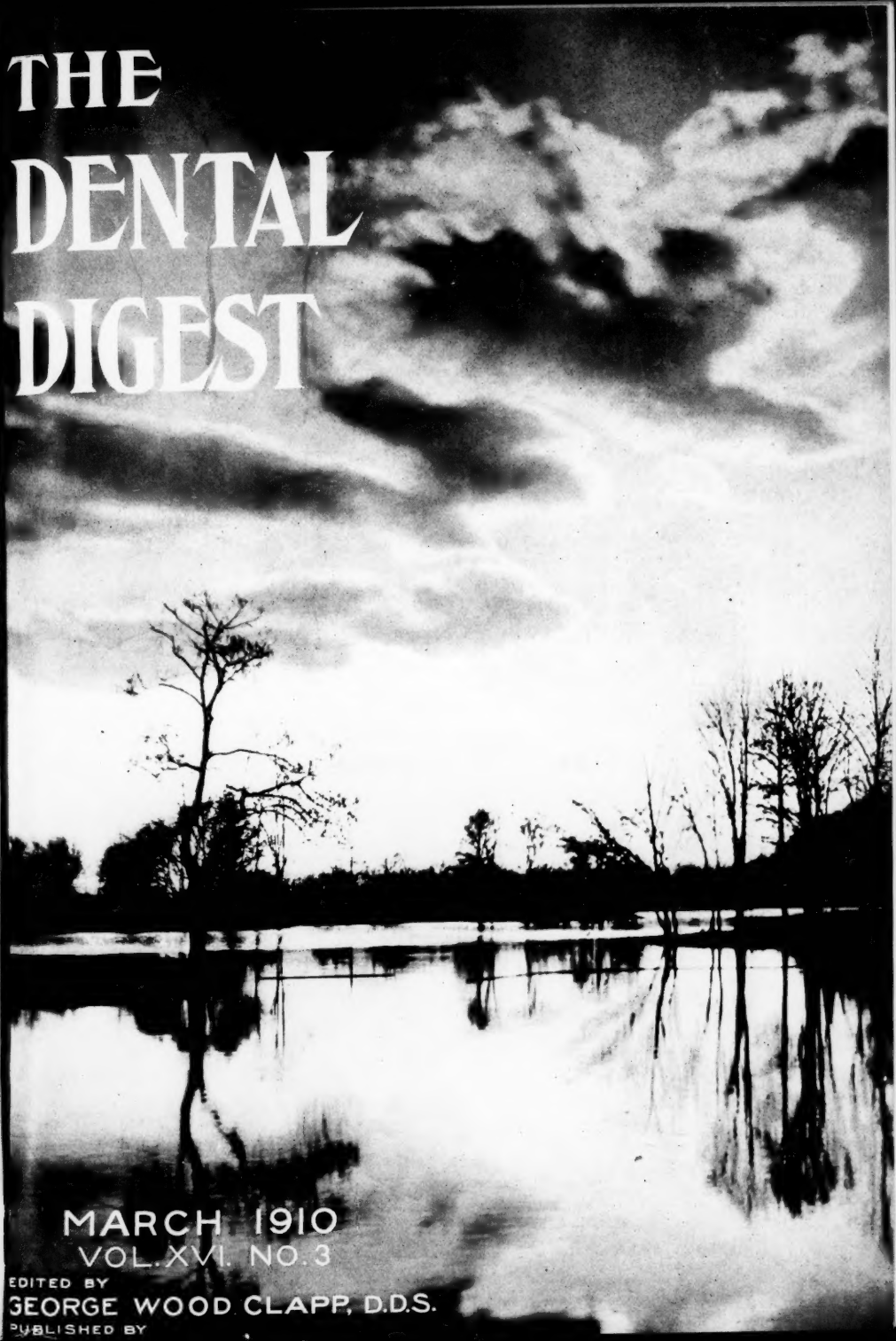
THE DENTAL DIGEST



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GEORGE WOOD CLAPP, D.D.S.

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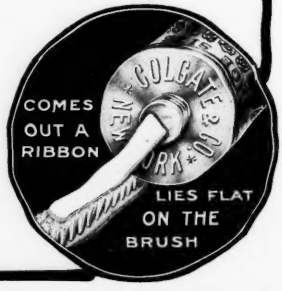

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THE DENTAL DIGEST

GEORGE WOOD CLAPP, D.D.S., Editor

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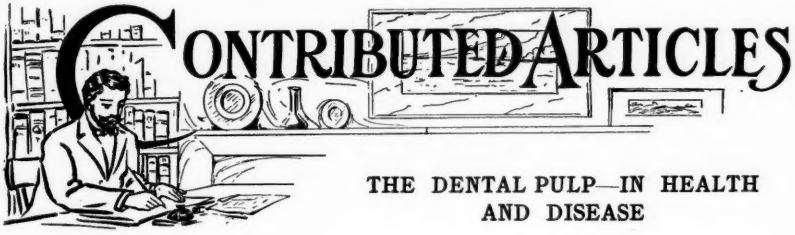

THE DENTAL PULP—IN HEALTH AND DISEASE

BY J. STAFFORD CONLEY, D.D.S., PROVIDENCE, R. I.

First Prize Article.

SEVENTY years ago dentistry started its record-making career. At that time there was practically no attention given to pathological conditions of the pulp and peridental tissue. The only relief given in such cases was invariably the forceps—utterly disregarding the value and necessity for preservation of teeth.

The rapid development of American dentistry naturally brought about the urgent knowledge of pulp conditions,—the wisdom of conserving same,—the means of so doing.

STRUCTURE AND FUNCTIONS OF THE DENTAL PULP

The dental pulp forms the dentin, and in the fully developed tooth nourishes it and renders it sensitive. It is not a complete tissue in the

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essential meaning of the term. A tissue is an aggregation of similar cells and their derivatives—the intercellular substances.

The tooth pulp exists as a soft mass resembling embryonic tissue. The intercellular substance is a mucus-like matrix of modified protoplasm, containing some loosely arranged connective tissue fibers.

On the surface in contact with the dentin, the cells are much more numerous and form a comparatively continuous layer. These are the odontoblasts cells, which normally form dentin.

The pulp is encased within unyielding walls of dentin, which normally protects it from impress of adjacent parts and irritating influences from without.

BLOOD SUPPLY OF PULP

Closely associated with the structure and function of all organs is the circulation. That of the pulp is notably peculiar. It is richly supplied with blood vessels. Not possessing a complete wall of muscular tissue, these vessels are not under the control of the vasomotor system of nerves.

The arteries enter at the apical foramina, and soon break up into capillary networks which are closely associated with the odontoblasts. The veins are numerous and pass out through the apical foramina and are probably continuous with those of the peridental membrane.

Please note that the area of entrance for the arteries and exit of the veins is identical. The blood supply to the pulp and the venous returns are through the same minute apical foramina.

When, for any cause, there is arterial hyperemia, the expanded walls of the arteries compress the veins, preventing the normal passage of blood from the pulp, resulting in ready engorgement.

The intensity of pulp pain is due to the possibility of great pressure upon the nerve terminals.

The pulp has none of the usual lymphatic vessels, therefore the products of disease must be removed by the veins, an added duty not thrown upon them in most other tissues of the body.

Assuming that the foregoing study is correct, it is evident that disturbances of the dental pulp are more destructive than in tissues of the body in general.

These are four principal reasons:

1. It is not a perfect tissue formation.
2. It is encased within unyielding walls.
3. Physical peculiarities in blood supply.
4. The absence of lymphatics.

INFLUENCES AFFECTING THE PULP—INFECTION

Infection is the act or process incited by the entrance and proliferation there, of harmful micro-organisms. Dental caries is a condition produced as the result of bacterial action. As the destructive process advances the pulp endeavors to protect itself. This barrier is formed in two ways—(a) by calcification of the tubules—(b) by the formation of secondary dentin. If the progress of decay is slow, the pulp may have sufficient time to fortify considerably. If the advance is rapid, irritation soon encroaches sufficiently to cause pain.

Decalcification precedes invasion by bacteria, therefore, if the pulp has been comfortable, and all of the decay may be removed and still there remains a wall of normal dentin, even though quite thin, the pulp has not been infected and may be conserved by a proper filling of the cavity.

If, however, the removal of all decalcified dentin would expose the pulp, what shall be the treatment?

Is it good practice to attempt to sterilize the leathery mass, make the tooth comfortable, if possible, under a test filling for ten days or a fortnight, and replace with a permanent filling?

TREATMENT OF EXPOSED PULPS

If the patient is healthy and the paroxysms of pain are not severe, prolonged or frequent, the writer believes it good practice to attempt to save the pulp. If the patient is so young that there is doubt as to the completion of the roots, all possible effort should be made to retain the organ, even though infection has invaded the bulbous portion.

This involved area should be removed under aseptic conditions, the remaining part being protected from pressure.

CAPPING THE PULP

1st. Aseptic conditions must prevail throughout entire process. Restore hyperemic pulp to normal before final covering. The chief cause of failure in many cases is lack of perfect sterilization.

2d. Avoid pressure in applying material for capping.

OPERATIVE TECHNIC

Flood cavity and field of operation with mild, non-irritating antiseptic solution, previously heated to the temperature of the body.

The following is suggested by J. P. Buckley, and is very efficient:

℞ Phenolin .....dr. i
Aquæ menthæ piperitæ.....oz. vi
M. Sig.

Remove all carious dentin. Sterilize dentin by sealing in cavity, for a week or two the following, a splendid remedy; anodyne, germicidal in its properties:

Menthol .....5 i
Thymol .....5 ii
Phenol .....5 iii

Quick-setting cement makes a very good seal, previously filling most of cavity with cotton to avoid pressure.

2nd Sitting. Apply dam and sterilize field of operation with absolute alcohol. Remove dressing. Cover exposure immediately over pulp with thin paste made by mixing precipitated calcium phosphate with eugenol. This paste should be gently coaxed over the exposure in such a manner as to exclude air. Fill cavity with cement.

PROGRESSIVE CARIES, CHEMIC IRRITANTS, THERMAL SHOCKS

If these are severe and have caused pulp pain with frequent recurrence, say daily, for several weeks, the structure of the walls of the blood vessels will have become so altered that recovery of their tone is extremely doubtful.

In adults, removal of the pulp seems best, with the possible exception of the anterior teeth where the question of shade is all-important.

Teeth containing such pulps will bear occasional inspection for signs of death.

When irritants are mild and long continued, slow pulp degeneration occurs.

The normal pulp responds only to thermal changes. After exposure of the dentin, it will react to any agent which will irritate the naked ends of the fibrillæ, as acids, sweets, mechanical irritation. This occurs in abrasion, erosion, exposures of necks of teeth, caries, and beneath all fillings and crowns placed on *vital teeth*.

It has been proven that no filling material or combination of material available can insulate the pulp of a tooth so well as perfect enamel and dentin.

Mild irritants are worthy of special consideration. They continue to stimulate the pulp until changes have taken place, the pulp is overstimulated resulting in the formation of secondary dentin.

There is a generally accepted and well established rule, that any influence which stimulates a formative tissue to production beyond the typal demand, or, in other words, after it has had a period of physiologic rest, causes a degeneration of the tissue. This holds good of the dental pulp as it does of other tissues of the body.

The pulp becomes more fibrous and less functional with advancing age.

The products of degeneration must be removed by the veins. These are closely associated with those of pericementum. It is quite possible that this membrane may suffer in consequence. When the existence of the causes of pulp degeneration becomes evident the writer firmly believes in extirpation of the organ for two good reasons.

1st. The harm that may result in contiguous soft tissue especially the peridental membrane, before pulp removal.

2nd. Because of the increase in the physical difficulties of successful root treatment.

ANESTHETIZATION—DEVITALIZATION

Removal and subsequent treatment of pulps.

Anesthetization:

The writer employs this method only in the six anterior teeth. The rubber dam should be always adjusted. Cavity is thoroughly sterilized before applying pressure. The majority of canals which contain live pulps are sterile. The cavity can be nicely sterilized by the use of a 10 per cent. solution of formaldehyde to which 5 per cent. sodium carbonate has been added. When the cavity is very deep 1:500 solution of mercury bichlorid is better, as it will cause no pain. After the cavity is sterilized and dried with warm air and alcohol, we are ready to use the anesthetizing solution, which should be made at the time.

A small amount of the alkaloidal salt of cocaine is placed on a clean slab. A pledget of cotton is dipped in freshly-distilled water and is then gently placed in contact with the flakes of cocaine. The latter readily dissolves, making a strong solution, approximately 5 per cent. The cotton thus saturated is placed in the cavity as nearly over the pulp as possible.

A piece of unvulcanized rubber, which will about fill the cavity, is selected and passed through the flame, thus sterilizing it and making it more pliable.

With gentle pressure by means of a suitable blunt instrument, the solution is forced through the dentin into the pulp. It may be necessary to make two or three applications in cases where there is considerable dentin between the cavity and pulp.

It is well, after the first application, to drill a small depression into the dentin toward the pulp, thereby aiding materially in confining the solution under subsequent pressure.

Care should be taken not to force the solution any further than is necessary, Cocaine is a general protoplasm poison, and if it is forced past the apex, pericementitis is sure to follow.

The pulp chamber is now opened in such a manner as to expose the canal. A large round inlay bur is best for this purpose. The bur should be previously immersed in a solution of lysol, then in alcohol.

The selection of a proper broach is an important matter. Always test a broach before entering a canal. The writer prefers a barbed broach.

A nice way to keep broaches in sterile condition is to have an assortment continually immersed in a solution of lysol. Just before using, place the desired broach in an absolute alcohol bath. I find the round glass dish with a cover used for culture purposes in pathological laboratories, just the thing, so practical and clean. I use two of them, one for lysol and one for alcohol.

There is necessarily more hemorrhage in the removal of live pulps by this anesthetization method than in the case of devitalization. The hemorrhage is soon checked by nature's method, after which the blood in the cavity should be thoroughly removed.

Many teeth darken on account of failure to properly remove the blood. Alcohol is a great solvent and is used for this purpose.

Dry canal, insert dry cotton, then place a pledget dipped in 95 per cent. carbolic acid in pulp chamber and seal as you prefer. *The canal should not be filled at this sitting.*

Devitalization:

Each operator has a choice of arsenical preparations. The writer prefers the fiber prepared by S. S. White, containing arsenious acid, creosote, tannin and opium.

In cases where the tooth has ached before the patient presents for treatment, it is good practice to allay the pain for at least twenty-four hours.

A wonderful balm can quickly be made with carbolic acid 95 per cent., adding enough sodium bicarbonate to make a paste, seal in cavity carefully.

In any case, before applying arsenical preparation, wash out cavity with warm solution of bicarbonate of soda, a teaspoonful to a glass of warm water. This neutralizes contents of cavity. As much of the carious dentin should be removed as can be done without producing pain.

A very small roll of the *fiber* is charged with creosote and then dipped in crystals of cocaine hydrochlorid. Enough cocaine will adhere

to the fiber to make the process of nerve destruction practically painless. The preparation is sealed *with cement.*

Conditions govern the length of time an arsenical application should remain sealed within a tooth.

1. The age and general condition of patient and pulp itself.

2. The amount and condition of the dentin between the pulp and the fiber.

Taking into consideration these factors the fiber should remain in the cavity from two to six days.

At the second sitting the dam is adjusted, the teeth included are sterilized and the seal and fiber removed. Freshen all surfaces of the cavity with large round bur. This insures thorough removal of the arsenic and mechanically sterilizes the cavity.

The pulp chamber is now opened and the pulp removed, observing practically the same details as explained under anesthetization method. In case the patient complains of pain upon opening the pulp chamber, it is safe to seal 95 per cent. phenol in the cavity in contact with the pulp tissue for a few days, when it can be removed without pain.

COMPLICATIONS

In this discussion thus far we have considered only favorable cases and methods of removal.

There are many instances where it is difficult to remove pulps by either anesthetization or devitalization, at least until the tooth is placed in a more favorable condition.

For example:

In approximal cavities, decay often extends far beneath the gum. The rough gingival margin of the cavity stimulates the gum tissue by irritation, causing it to proliferate and fill the larger portion of the tooth cavity. In such cases the cavity must be enlarged, washed with warm antiseptic solution, dried as well as possible and packed with warm gutta-percha.

Where the gum tissue occupies the entire cavity, the hypertrophied tissue should be removed at once, employing gum scissors thoroughly sterile, or a lancet.

The hemorrhage can be controlled with gauze sponges dipped in hot carbolized water. The blood should be thoroughly removed, the cavity dried, then moistened with eucalyptol and packed with gutta-percha, filling the interproximal space.

With a heated instrument remove sufficient gutta-percha from the interior of the cavity to permit access to the pulp, allowing a safe application of whatever method the operator deems best.

dipped in crystals of cocaine hydrochlorid. Enough cocaine will adhere

Hypertrophied pulp tissue is usually resistant to both cocaine and arsenic trioxid, and in cases where it is present it is necessary to resort to actual cautery or to employ strong escharotics such as pure phenol-sulphonic acid. It may become necessary to administer nitrous oxide that we may painlessly remove the tissue.

In conclusion the writer wishes to remind the reader of the great obligation we as dentists owe our patients. It is our duty to save the pulps of teeth in all cases when it can be accomplished with any reasonable degree of success, not overlooking the necessity for recognizing the hopeless conditions and the folly of attempting to save a pulp that has been irritated to the extent of lessening its vitality, and which must eventually result in pericemental involvement.

SOME IMPORTANT FACTS CONCERNING PYORRHEA ALVEOLARIS, WHICH EVERY PRACTITIONER SHOULD KNOW*

By R. G. Hutchinson, Jr., D.D.S., New York

. . . . . .

The fact that local treatment, when properly carried out, effects a complete cure of the disease in the mouth, without recourse to any constitutional treatment whatsoever, and often in spite of well-defined constitutional disorders, and that there is no recurrence, is absolute proof that pyorrhea is a local condition and not dependent on constitutional conditions. Fairly thorough scaling will often apparently effect a cure under favorable constitutional conditions. Then, later on, if the resistance is lowered or local conditions have grown unfavorable again, there is recurrent inflammation, leading to the belief that the constitutional condition of the patient is alone responsible for the recurrence. This is not the case. Had the operation been perfect, no matter what changes may occur constitutionally, if the mouth is kept clean there will be no recurrence. This I have demonstrated conclusively in my practice.

Of course certain systemic conditions may exist which would make impossible a complete cure of pyorrhea, but only when such conditions would prevent the healing of any surgical wound. In the great majority of cases of failure is the result of imperfect instrumentation. . . . —*Items of Interest.*

* Read before the Union Meeting of the Third and Fourth District Dental Societies.

THE MECHANICAL SIDE OF ANATOMICAL ARTICULATION
(Continued) *

By George Wood Clapp, D.D.S., New York

(*Fourth Article*)

Synopsis of previous articles. The visible characteristics of anatomical articulation have been outlined as well as those features of it which may be reproduced in artificial dentures. The successive steps in proper bite-making have been considered. The "occlusal plane" of the bite has been determined, they have been built to correct heights and fullness and have been marked for the sizes of the teeth.

GETTING ACTUAL DIMENSIONS

A millimeter is the most convenient unit of measurement in which to obtain the dimensions of the required teeth. With a flexible millimeter measure † get the distance, in millimeters, between the high line and the labio-incisal angle of the bite, as in illustration No. 28.

This gives the length of the labial surface of the upper central. It is here shown as 9½ millimeters. One or one and a half millimeters additional should be allowed for the collar or for a portion of the tooth to project into the vulcanite, since this greatly assists in supporting the tooth against stress. The length of central required for this case is eleven millimeters.

Measuring from the pin-hole to the labio-incisal angle shows that there are seven and a half millimeters of space between the most dependent part of the gum and the labio-incisal angle of the bites. In the tooth selected the combined bite and shut should not be more than a millimeter or so greater than this, or it will not go to place without grinding.

If lower teeth are to be selected, measure from the low line to the labio-incisal angle to get the length of the labial surface, adding for collar as on the uppers and adding about a millimeter for that portion of the lowers which underbites the uppers. Theoretically, the cutting edges of the lower incisors come on a level with the rest line of the lips, but when setting artificial teeth for anatomical articulation, very little underbite can be allowed, so a millimeter will doubtless answer every requirement.

To get the width of the six anteriors, bend the measure close around

* This series of articles began in December, 1909.

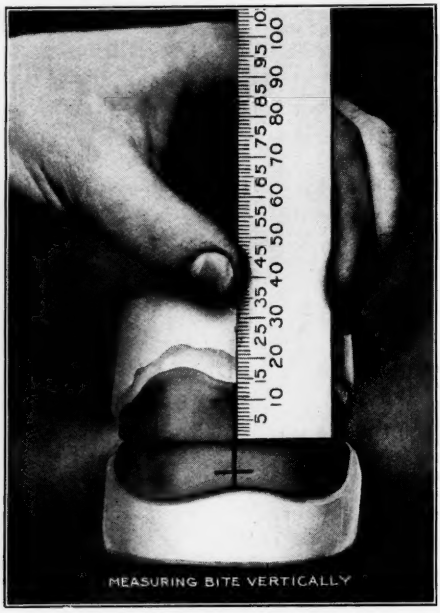
† These may be had free on request to the author.

cieties.

the labial surface of the upper bites at the labio-incisal angle, and note the distance between the marks made at the corners of the mouth.*

To get the width of the full set of uppers, measure between the marks made to locate the distal sides of the second molars, measuring in the same way as for the anteriors.

These measurements give in millimeters the dimensions of the required teeth. There are several ways in which these dimensions may



No. 23.—Measuring bite vertically to get length of incisors, and combined bite and shut.

be used to select teeth, but by all means the most convenient way is to refer to tables where the lengths, widths and combined bites and shuts of various moulds of teeth are given in millimeters. From such tables selection may be quickly made.

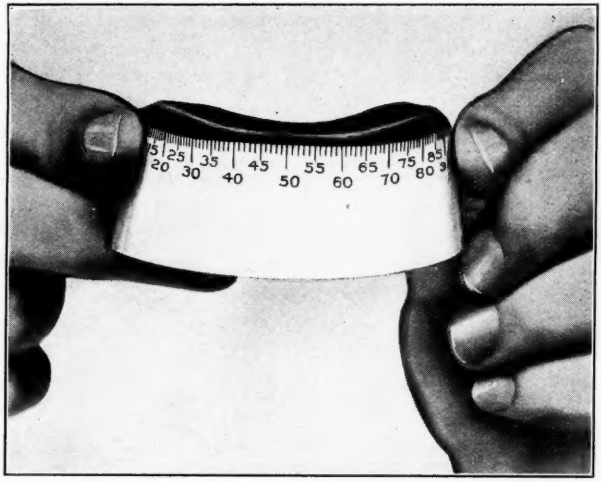
One such book is published, and from the tables it contains a section is shown here.†

* This can often be more conveniently done by inverting the upper bite while measuring.

† The Twentieth Century Mould Book, published by The Dentists' Supply Company, New York, and sent free on request. While the book is published for the benefit of the goods made by the publishers, it offers much valuable information which may be applied to any teeth. So far as the writer knows it is the only book which offers a scientific, practicable method of selecting teeth.

The first column of the table shows the number of the mould, which is described by the figures in that line. Thus, to get the dimensions of Mould 13, the first one shown, it is necessary only to follow the line across the different columns.

The first dimensions sought is "length of central." This was found to be eleven millimeters in the case in hand, and several moulds having centrals of that length will be found in the columns. From among



No. 29.—Measuring the upper bite horizontally to ascertain width of six anteriors and full fourteen.

them may be selected that mould which most nearly meets the other requirements.

In the case in hand the width of the desired anteriors is forty-three millimeters, and of the full set, 101 millimeters.

There is no mould with the central eleven millimeters long and the anteriors exactly forty-three millimeters wide, but Moulds 91 and 51 have anteriors of the right length and within one millimeter of the correct width. As a millimeter is practically only one-twenty-fifth of an inch, this small variation from the requirements will not prove bothersome.

Of all the moulds in the table, Mould 51 comes nearest meeting the requirements so far. If the combined bite and shut are correct, it meets requirements as to size. The bite and shut of Mould 51 is neither too long nor too short, it permits the tooth to sit in proper relation to the ridge with the cutting edge and neck in the proper location.

Mould 51 is correct in size, but it cannot be told whether it will harmonize in outline with the patient's face until it has been carefully examined for that purpose. The last column of the table shows that Mould 51 is illustrated and described on page 33.

Mould 51.—Dimensions of centrals: length, 11 mm.; width, 7 mm.; bite, 3 mm.; shut, 4 mm.; ridgelap, 4 mm. Approximate width, 6 anteriors, 42 or 43 mm. Approximate width, full 14, 102 mm. Com-

MEDIUM LONG MOULDS.

(ALL DIMENSIONS ARE IN MILLIMETERS.)

Mould No.	Length of Central	Approx. width 6 anteriors set on Bonwill Circle	Approx. width full 14 set on Bonwill Circle	Combined Bite and Shut of central	Bite of Central	Width of Central	Articulates with lower moulds	Cut and description on page
MEDIUM LONG AND NARROW.								
4	10	43	103	4½	2	7	3-21-9-65	29
11	10	43	102	5½	2½	7	7-2-10	30
14	10	43	105	7½	3½	7	a14-2-3-8-70	30
16	10	42	99	4½	2	7	24-7-27	30
31	10	42	103	5	2	6½	7-2-70	30
41	10	43	103	5½	2½	7	7-8-2-10	31
89	10	42	98	7	3½	7	8-2-3-10	31
67	10	40	100	6½	2½	6½	67-7-2	31
37	10½	43	104	7	3	7	a37-3-2-8-70	31
19	10½	43	104	6	3	7	a19-7-24-2-8	32
30	10½	42	100	7	3	7	a30-3-2-7-17	32
90	10½	42	100	7½	4	7	90	32
27	10½	40	101	8½	4	6½	25-7	32
51	11	42	102	7½	3	7	51-11-3	33
91	11	42	99	5½	2	6¾	91-2-7	33
MEDIUM LONG AND MEDIUM WIDE.								
13	10	43	107	7	3	7½	65-3-21-5	33
20	10	44	106	6½	3	7½	53-1-5-24	34
88	10	45	108	6½	3½	7½	9-3-2-24-70	34
5	10	44	105	6½	3	7½	a5-2-3-21-53	34
6	10	45	106	5½	2½	7½	a6-3-21-53-9-8	34
72	10	47	115	6½	3	7½	72-73-43	35
23	10	45	109	6	2½	7¾	40-5-65	35
7	10½	45	110	7½	4	7½	1-5-92	35
24	10½	43	108	7½	3½	7	1	35
2	10½	45	104	6½	3½	7½	3-8-2-10	35
35	10½	45	106	7½	4	7⅝	a35-65-5	36
79	10½	45	108	7½	4	7⅝	79-5-6	36
39	10⅝	43	103	7	2⅝	7½	8-2-10-7	36
25	10⅝	44	107	6½	3	7⅝	5-3-65-16-53	36
92	10⅝	45	110	7½	4	7⅝	92-5-103	37
9	10⅝	45	107	7½	4	7⅝	6-5-40-79-92	37
40	11	44	105	7½	4½	7	8-2-3-7	37
28	11	45	106	5½	2	7½	65-16-3-11	37
29	11	45	109	7	3½	7½	1-16-5-103	38
63	11	44	103	5½	2½	7½	8-7-10	38
65	11	45	106	6½	3	7⅝	65-3-11-21	38
12	11	46	106	6½	3½	7⅝	5-6-16-79	38
46	11¼	44	105	9½	3½	7½	3-5-11-16	39
66	11⅛	45	114	8½	3½	7¼	66	39
103	11½	47	114	9	4	7¾	103-92	39
MEDIUM LONG AND WIDE.								
75	9⅝	50	116	6½	3	9½	75-69-19	39
47	10½	46	110	6	2⅝	8	6-5-28-79-40	40

Portion of table showing measurements of plain vulcanite teeth.

bined bite and shut of central, 7½ mm. Required vertical space second molar, 5¾ mm. Collar. A lap lateral mould.

The outlines of the anteriors in this mould are almost identical with the outlines of Mould 67, save that the dimensions are larger and that the disto-incisal angle of the lateral is not cut away so much.

Indications.—For faces of full medium length, and nearly full medium width. For cases where the labio-incisal angle of bite comes

7½ mm. below the surface of ridge, and the lip is raised about 10 mm. when laughing.

For the case here described, upper Mould 51 answered very well indeed and was selected at this time. The order was given by mould number and the teeth were laid aside to await the setting.

The next step in the work will be the mounting of the bites on the articulator and the determining of the condyle plane. These will be taken up in the next article.

* * *

Since the book here mentioned was published, the anatomical moulds in bicuspids and molars which are especially designed to facilitate anatomical articulation of dentures have been brought out. The anteriors of Mould 51 may now be obtained with these bicuspids and molars.* The width of the full 14 remains unchanged.

Mould 51 enjoys one distinction which should not be lost sight of in connection with the esthetic side of the dentures. It is a "lap lateral" mould.† That is, the mesio-incisal angles of the upper laterals are more acute than in most moulds, and the lingual side is so hollowed as to permit setting these angles somewhat in advance of the centrals. This pleasing irregularity is well worth attention by him who would have the dentures appear well.

It has long been the custom of many workers to mount the models on plain line articulators, and to "set them on" by guess, "getting them about even." This method of work is doomed by its own insufficiency in the face of advancing knowledge. The plain line articulator does not permit reproducing those movements of the mandible in which

* These bicuspids and molars are separately known as Nos. 99 upper and lower.

† Twentieth Century Moulds Nos. 39 and 67 are also lap lateral moulds.

the dentures must participate.* As the dentures will be practical successes only in the degree in which they facilitate these movements, it is well worth while to use that articulator which most nearly insures success.

The writer is not familiar with all the articulators offered, but among them are three which are greatly superior to the old plain line form. They are the Grittman, the Kerr and the Snow.

Of these articulators the Grittman is probably easiest to use. The condyle path is already established at about medium inclination. For cases showing approximately this inclination of condyle paths this articulator is reported as very satisfactory and thousands of them are in successful use. For cases where the condyle path is more horizontal or more inclined than medium, or where the path varies as between the two sides of the same face, this articulator is not suited.

The Kerr articulator permits adjustment of the condyle path within a limited range and probably meets the requirements of the great majority of cases.

The Snow New Century Articulator has been used in the cases here illustrated. It permits adjustment of the condyle path within a wide range of variation. Its manipulation will be described as occasion requires.

* By the use of small pins in plain line articulators a certain range of movement is obtainable, but the writer believes it not worthy of serious consideration.

(The next article in this series is expected to appear in the April number.)

——, Missouri.

"If what I read in the numbers I have received is what The Digest is to have in succeeding numbers, I believe it is the best book a dentist can get to help him in the way he needs help most."

REPORT OF THE PROPOSED DENTAL EDUCATIONAL AND HYGIENIC WORK IN THE CLEVELAND PUBLIC SCHOOLS*

(*Continued from February Number*)

By W. G. Ebersole, M.D., D.D.S., Chairman

Committee on Oral Hygiene, National Dental Association

If you are interested in the progress of dentistry and missed the first paper, published in the February number, it will pay you to read it. This instalment is made shorter so as to be easier reading. The balance of the report will be published in short instalments. Give each careful attention because you will hear from this work in many ways in the days that are to come.—Editor.

The committee of twenty-two asked the committee of three to present their plans and an estimate cost in time and money, which was as follows:

Gentlemen—The Committee on Education and Oral Hygiene, in compliance with your request, wish to submit the following report:

Total amount of work to be undertaken:

1st. Examination of 56,000 pupils.

2nd. The maintaining of four clinics for five half days each, per week, for thirty weeks.

3rd. The establishment of lecture courses and a systematic campaign of Dental Education.

In carrying out this work it is understood by the committee that all equipment for this work will be furnished by other organizations, namely, the National Dental Association and the Ohio State Dental Society, the Cleveland Dental Society being called upon to simply furnish the men and assistants to do the work, therefore, this report deals with that side of the proposition.

The Committee finds that the 56,000 pupils of the schools (exclusive of High schools) can be examined by a dentist and lady assistant, at the rate of about thirty per hour, thus requiring 1,866 hours or 622 half days of three hours each, or 311 days of six hours each, or one day less than 52 weeks, or one year to make the entire examination.

In figuring relative to the clinical work, the Committee has based its calculations on operating the four clinics for five half days each per week for the school year of thirty weeks. This would require twenty half days per week for each of the thirty weeks to man the

* Read before the Cleveland Dental Society. Courtesy of the *Dental Summary*.

four clinics, or six hundred half days or three hundred days, or fifty weeks of six days each.

The character of the lecture courses and the educational campaign is such that only a rough estimate of the time required to man it can be made. The most of this work falling outside of the regular hours of both the dentists and the schools, the committee thinks that it should not be included in the general estimate, for it believes that it can secure men to do the work in addition to and aside from the general proposition.

It has, however, been estimated by our committee that about 25 days' time would be required in this direction, or one day over four weeks of six days each.

Therefore, if it will take one dentist and an assistant 311 days or 52 weeks to examine the 56,000 pupils, and the clinic work, as laid out by the committee, requires 300 days or 50 weeks, we have 311 days or 52 weeks' examination work plus 300 days, or 50 weeks' clinic work or 611 days, or 102 weeks' work in all, exclusive of the lecture and educational work.

This, gentlemen, would simply require the giving of one week's time by each of the present membership of the City Society, which is 102 men, but if to this we add four weeks allotted to the lecture course and educational work then it would require 106 men, giving one week each to do the whole work.

This means, gentlemen, that each member of the City Society would only be required to give one-fifty-second part of his entire time for one year to guarantee the successful execution of one of the noblest, worthiest and broadest projects ever undertaken by the dental profession, either from the altruistic or economic standpoint. This simply means that each member of the society would have to give twelve half days of from 8:30 to 11:30 a. m., distribution throughout the thirty weeks of the school year, or pay towards the cause an amount which would enable the committee to procure competent service to do the work properly.

The committee would, therefore, recommend that the members of the entire society pledge themselves to give either one week of their time to this work, or an equivalent which will enable the committee to complete the work.

In complying with your request, the committee has ascertained that the price at which competent services can be procured for the clinic work will be at the rate of $5.00 per day. The dental service for the examination work can also be secured for $5.00 per day, but to this must be added the cost of a lady assistant at a cost of $1.00 per

day, making that work cost at the rate of $6.00 per day, but inasmuch as fifty per cent of the work is devoted to each, the examination and the clinic, it would therefore, require each member who did not give his time and assistant, to pay at the rate of $5.50 per day.

The cash equivalent to run the work:

Examination	$1866.00
Clinic	1500.00
Lecture and Educational	125.00
Grand Total	$3841.00

or an amount $1.00 in excess of the amount that would be obtained from 116 men paying an equivalent of $5.00 per day for one week of six days per week or $3,480.

Respectfully submitted,

Signed,

J. R. Owens.
W. A. Price.
W. G. Ebersole,
Chairman.

This report received the unanimous endorsement of the committee of 22 members, recommending it to the society for adoption.

Following the recommendations of the above report to the society by the committee of 22, the following agreement was passed and signed by 21 members of the 22:

We, the undersigned, agree to pledge to the work outlined by the Committee on Dental Education and Oral Hygiene, of the Cleveland Dental Society, for the School Children of Cleveland, at least one week of service, or Thirty-three ($33.00) Dollars.

The committee then decided to divide itself into three sub-committees for the purpose of outlining methods of doing the work.

The committee was divided as follows:

Examination.	Clinics.	Educational and Lectures.
J. R. Owens	Weston A. Price	W. G. Ebersole
J. F. Stephan	Frank Acker	Henry Barnes
H. R. C. Wilson	Geo. H. Wilson	Ira W. Brown
M. D. Neff	W. B. Bissell	W. T. Jackman
E. L. Pettibone	T. B. Johnson	W. A. Siddall
J. T. Newton	S. M. Weaver	W. H. Whitslar
J. W. Culver	W. S. Sykes	D. H. Ziegler
Chas. K. Teter		

(*To be continued*)

HOW TO FILL TEETH WITH GOLD

By J. V. Conzett, D.D.S., Superintendent of Practitioners' Course in Operative Dentistry, Drake University College of Dentistry, Dubuque, Iowa

The one material that every dentist prides himself on being able to use successfully, and the one that has more failures credited to it than any other, because of misuse, is cohesive gold. The king of filling materials exacts implicit obedience of all its subjects or it is a despot demanding its due. Obey the laws governing its use and it is a sovereign benign in its reign and a blessing to practitioner and patient.

Gold is the only metal that has the power of welding perfectly in the cold state, and it is this property of cohesiveness that gives it its great value as a material for filling teeth. It comes to us in two different forms, as a foil or as crystal gold. The foil may come from the dealer as a foil or rolled into ropes or cut into pellets, but it is still the foil. The crystal gold may, and does, come under various names and several different appearances, but it is the crystalloid form. In placing cohesive gold into a cavity it must be inserted under considerable hand pressure or the pressure may be applied with the mallet, or there may be a combination of both forms, which is preferable. Both the foil and the crystal golds have their advocates, and both have their good points, and, intelligently used, good results may be accomplished with either form. But one should not be mislead by the advertisements of some forms of the crystal gold in which it is asserted that the particular gold advertised is as easily adapted as a plastic, and that the results are as good as a filling made under the force of a mallet. To illustrate, let me repeat an incident that I have reported in another paper: An agent who was demonstrating a certain crystal gold asked the privilege of showing it to me and produced his "kit," consisting of an ivory or bone handle of a tooth brush in which he had drilled a cavity, a set of large ball-shaped pluggers and his wonderful gold. He said that no force was necessary to introduce this gold into a cavity and to produce a beautiful, dense filling, and he proceeded to place piece after piece of gold into his cavity quickly building it up, and with moderate hand pressure condensing the same into the cavity. I said to him, "You can obtain no density in that way," and he smiled in a superior way and said, "No, you could not with the ordinary gold, but with this gold it is different. You can, as I will show you." I waited until he had finished his filling, and then I asked him if he wanted me to

show him how dense his filling was. He said, "Certainly, give it any test you like." I picked up a sharp-pointed instrument, and with very little effort forced it clear through his dense (?) filling. He had nothing to say, packed up his traps and went off to try it upon some one else.

Now I have no quarrel with crystal gold in any of its forms, neither have I any quarrel with any of the manufacturers thereof, but I do most decidedly object to the statement made by some that their gold is as easily worked as a plastic and that beautiful dense fillings can be made by simply hand pressure. I object to those statements because they are untrue. Experiments in Dr. Black's laboratory, on the contrary, have shown that given equal mallet force the crystal golds fail to make fillings as dense as the foils. If the crystal gold is to be used it must be used carefully, using small quantities at a time and as carefully condensing each piece as you would a pellet of foil. In that way good results may be obtained; but I believe that the foil is a safer, better and easier form of gold to use than the crystal forms, therefore I use the foil exclusively in my practice.

In preparing the foil for use as a cohesive gold we use the No. 4 "soft," as it is marked by the dealers. That "soft," which is made non-cohesive (which should be the name on the cover) by the deposition upon its surface of a film of ammonia gas. We prepare this foil in pellets of 1/64, 1/32, 1/16 and 1/8 sheet to the pellet. These pellets are made by cutting the sheet into halves, the halves into quarters, etc., until we have the desired 1/8, 1/16, 1/32 or 1/64 which we may desire for the particular case in hand. The corners of these squares of gold are folded in toward the center and the square rolled into a loose pellet. We prepare the gold this way for two reasons: the first, and greater, is because we want to use the foil that comes to us as a non-cohesive foil; because the surface of such foil is protected by a covering of a film of ammonia gas, which effectually prevents the contamination of the gold by another and perhaps very detrimental matter. We know that certain gases and fumes have a very deleterious effect upon gold. Carbon dioxide, for instance, being deposited upon its surface makes it permanently non-cohesive. So that if a piece of unprotected foil came in contact with some substance that made it non-cohesive and we were to incorporate that gold into our filling we should make a weak spot that will ultimately cause that filling to break or the gold to flake off.

I have no doubt but that many of the fillings that have failed in that way have done so through the contamination of the gold in the hands or in the operating case of the dentist. This difficulty is very largely, if not entirely, obviated by the use of the gold with the ammonia protected surface. For the gold is effectually protected by the

ammonia until it is just ready to be used, when it is annealed and the ammonia is driven off and the perfectly pure surface of the gold is exposed for perfect cohesion with the gold in the filling.

The second reason for making the pellets ourselves is because we want to know definitely just how much gold we have under our plugger point at any moment of time. Laboratory tests have shown that to obtain a certain density it is necessary to subject a certain amount of gold to a certain quantity of force. Believing that definite methods produce definite results, we are as definite in all of our operations as the nature of the case will permit.

In teaching the condensation of gold we advise the use of the hand mallet in the hands of a trained assistant. This mallet in our practice is an eight-ounce lead-filled mallet, faced with leather and is placed upon a handle 12 inches in length. The force of the blow varies from five to twenty pounds as the nature of the case may demand, and this blow of the mallet is augmented by the hand pressure of the operator. The operator may assist the mallet with hand pressure or he may entirely overcome the benefit of the blow by holding his instrument off of the filling and resisting the blow. In that way he may by using a ten-pound mallet blow increase the delivery upon the filling to twenty-five pounds by using 15 pounds hand pressure at the moment of the delivery of the mallet force. Or on the contrary, by not using any hand pressure and holding his instrument away from the filling, the effort of the mallet may be almost or entirely overcome, and very little, or practically none of the force of the blow be delivered to the filling. The hand mallet produces the best results if used scientifically, but if not, then the automatic mallet is its superior, for by the nature of the instrument it is necessary to use some hand pressure upon the filling before the blow is delivered, consequently the full force of the automatic mallet is always delivered upon the filling. This is not true of the electric mallet, nor of the engine mallets, for these may be and generally are, used in such a way that they just skim over the surface of the filling and there is no depth to the condensing blow.

In using the hand mallet, we aim to have a ten-pound blow, augmented by such hand pressure as the nature of the case may indicate, and to a 1/64 sheet pellet we use 20 blows of the mallet, to a 1/32 pellet 40 blows, to a 1/16 80 blows, and to a 1/8, 160. We then know that we have a filling that will be so dense that the air spaces are practically eliminated; therefore the plug is not of a spongy nature and is not absorbing a great deal of moisture and contained organic matter, to become an offense to the individual and those with whom he comes in contact, as well as a menace to the health of the tooth. For

a filling may be well placed in a well shaped cavity, and yet be of so porous a nature that it will fail by reason of the absorption or moisture and the consequent disintegration of its coherent particles. Every dentist of any degree of experience has come across fillings that have been of so frail a character that he has been able with an excavator to pick them out of the teeth. This is not because the filling was in that condition when it was finished. For a man could not make a filling in which the particles of his gold failed to cohere to that extent. The reason is, that when the filling was made, it was made with an insufficient amount of condensing force, consequently the particles of gold were not driven into close adaptation. There was a large percentage of air spaces and a consequent porosity of the filling. This porosity by reason of capillary attraction sucked in the moisture of the mouth, the cohesion of the particles of gold was broken up, and instead of a beautifully homogeneous filling, we have one that is granulated and ready to fall out. And if it does not go to that extent, still if the air spaces are numerous, it absorbs a sufficient amount of organic matter to become offensive. If you do not believe that, roll the next old filling that is not well condensed, in your fingers and then smell of your fingers. Or better still, hold it over an alcohol lamp and watch the organic matter burn out and I am sure that you will agree with me that such a filling placed in the tooth of a person of at all fine susceptibilities would not be a very joyous thing. The specific gravity of cast gold is 19.2 and the closer we can approximate that, the better our filling will be. A filling of a lower specific gravity than 14 is not a safe filling and cannot be depended upon to save the tooth. With the hand mallet and good hand pressure, with proper instrumentation, a specific gravity of 18 can be, and should be obtained, but in the majority of cases a filling of 16 specific gravity will save the tooth and will make a very serviceable filling if too much stress is not brought to bear upon it. The greater the amount of stress the greater must be the specific gravity. In approximal cavities in incisors where there is practically no stress brought to bear upon the finished filling, the density required is not so great, but fillings in cavities involving the incisal angles or in the cavities occurring in the occlusal services of the bicuspids and molars, call for the highest density that it is possible to give them. Some one recently asked why it was that a well malleted gold filling in the occlusal surface of a molar was better than a pure gold cast inlay in the same situation. The answer is easy, for we know that gold is tempered by malleting and becomes hard, and when we want to soften it we anneal it, so that the finished malleted filling is tempered to the highest degree of hardness, while the pure gold inlay is cemented into the tooth after having been melted, and is

consequently in its very softest condition. If I were writing on gold inlays I should advise never to use pure gold in making an inlay in a cavity that was to contain a filling that had to resist any special degree of stress, for owing to its extremely soft condition the gold would have a tendency to flow under the stress and draw away from the margins of the cavity. If I were to make an inlay in such a place, as in any occlusal or proximo-occlusal surface of bicuspid or molar, I should use an alloy of one or two karats and thus obtain the hardness of gold that would be capable of resisting the forces which might be brought upon it.

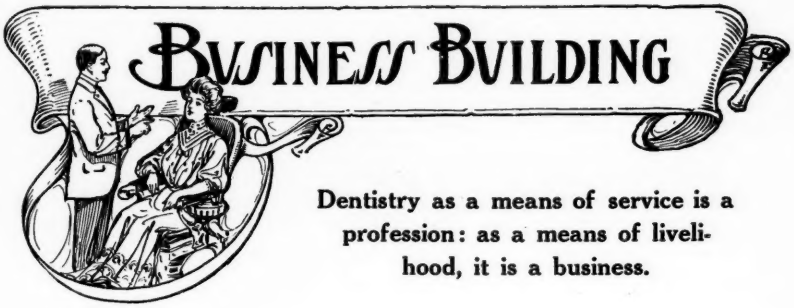
REMOVAL OF PULPS

By Dr. H. A. Cross, Chicago, Ill.

When we find it necessary to devitalize and remove a pulp from a distal cavity in a molar or bicuspid, the operation may be simplified by adopting the following method:

Remove all the decay possible near the pulp and provide for retention for a permanent filling, such as amalgam or Ascher's Artificial Enamel, preferably the latter. Apply the devitalizing paste and place over it a metal disk of sufficient strength to resist the pressure of inserting the permanent filling. Insert the filling and finish as you wish it to remain permanently. When the devitalizing agent has remained in the tooth the desired length of time, make a new opening into the pulp chamber through the occlusal surface of the tooth far enough mesially to enable you to gain access to all the canals, and remove the devitalizing agent and all the decay that remained in the cavity. Then proceed with the treatments and canal filling in the usual way.

You thus avoid the difficulty of trying to apply the required treatment through the almost inaccessible distal cavity. The occlusal cavity may be filled with a permanent filling after the root canals have been successfully filled. In this way you will find it unnecessary to cut away the crown to such an extent as to weaken it, as would result if a mesial opening was made to gain access to the canals.—*The Dental Review.*



Dentistry as a means of service is a profession: as a means of livelihood, it is a business.

DENTISTS AS SEEN BY THE DENTAL SALESMAN

By A Dental Salesman

Prize Article

However much or little the dental salesman may know about the professional side of dentistry, he is fully posted in the business side. He knows many facts not known to the more successful members of the profession, and some of which have shocked the editor as he has learned them.

Often the dental salesman knows why we do not succeed better.

One who has an extensive acquaintance among dentists here points out some sources of weakness and some of strength.—Editor.

Editor Dental Digest,
New York City, N. Y.

Since using dental supplies and selling dental supplies are so closely allied, we naturally would like to see every dentist a pronounced success. Our impression is that the dentists fail in convincing their patients that their profession has passed from the time when the good old family physician or the veterinarian did the extractions (not painlessly) and left it for nature to do the rest. The care of the teeth and mouth should be taught in the public schools just as much as the care of the body, and dentists should demand it.

Another phase should always be borne in mind. Patients should be made to feel and believe that a dentist is doing them as much good in performing his services as the eye and ear or nose and throat specialist. A knowledge of the character of work and why it is necessary should be drilled into the patient. Don't talk fees. Talk quality and necessity for what you are trying to perform. Suppose you had typhoid fever and your physician told you he could cure you one way for so much, and he would try and cure you for a certain sum. Most of us

would accept the sure way. Many dentists overlook the very important features which bring satisfactory fees.

Almost fifteen years of experience has taught us that the great stumbling block to financial independence with the average practitioner is due to the fact that he frequently lacks business building or practice building experience at the beginning of his career and does not in all cases develop it afterwards. A dental practice is a bread and butter proposition with the majority of dentists, but the fact that it is a profession (and a noble one) seems to disbar the dentist from becoming a practical, hard-headed business man.

As we journey through various offices one fact is always impressed forcibly upon us—*i.e.*, DENTISTS DO NOT SEEM TO SET ANY VALUE ON THEIR TIME, which, with their skill, is their entire stock in trade. How often have we seen examinations made, temporary treatments put in, advice given, all no sign of emolument, and accepted by the dentist as a part of the unpaid work of the day. Why should a dentist examine a mouth and prescribe treatment without a fee being paid? Does a physician make a diagnosis or prescribe treatments without charge? Are not the teeth of just as much importance as the eye, nose or any other part of the human body?

There is another phase of the question which suggests itself. Why doesn't the average dentist keep a thorough set of books, something, if need be, he can go into court and swear to. Instead, they scribble down something in a wellworn book without knowing where to look for it when it is wanted, and in many cases do not even put it down. We personally know of many dentists who have been victimized by unscrupulous patients, and in some cases the patients have left simply because they were never able to get a satisfactory or detailed statement. This recalls an incident we witnessed some few weeks ago:

A patient had some dental work performed, and the fee agreed upon was $140. Of this amount $40 was paid at the beginning. The work dragged along, and when finally completed the dentist was asked the amount of his bill. He should have had it ready, but, alas, he did not. After some haggling, the patient was allowed to pay $80 as the balance due, and the net loss to the dentist was $20, besides some unpleasantness which could have been prevented, all because he had never written it down for either himself or patient.

Personality, perhaps, plays more of an important part in success than any other known quality. There are well defined rules to follow in order to attain success, but no one holds a receipt which might be followed by all satisfactorily. When we see a dentist start out with a stock of courage, combined with well defined ideas as to neatness and

cleanliness both in office and person, we jot him down as one with all the characteristics of modern success, providing he has earned his diploma. In the past twenty years, and more noticeably in the past five years, our standard of living has been undergoing a change. Just so sure as a clean dining-room with cleanly waiters in attendance appeals to us, just so a well kept dental office with a well-groomed operator attracts us. Many of the old régime of dentists, and some of the brightest minds, seemed to lack this qualification. The idea of using soiled linen, knives and forks, served by unkempt individuals, doesn't make a strong appeal to most of us. Reverse the conditions and the dental office drives away those whom it should attract. Cleanliness costs but little, and, like the boy who learned a trade, "it's money you can't spend."

Frequently we are asked, "How much of a stock of supplies should I carry?" Carry enough and no more. Don't be out of a stock of teeth or crowns if you are not fortunate enough to be located within five minutes' access to a dental depot. Many times have we been told by dentists that had they had a stock of a certain thing they could have made a bridge or a plate, etc. Because they did not have the article on hand the work went elsewhere or was not performed.

In buying supplies, if your own experience isn't sufficient, ask advice. No real salesman will intentionally deceive you, nor will he be so blind to his own and his house's interests as to "stuff you." He knows you will find it out sooner or later if he does, and no modern dental house wants to load its customers to the gunwales. It isn't business to do so.

Frequently it happens that dentists who administer nitrous oxide or somnoform will refuse to carry more than enough supplies for one administration; especially is this true of nitrous oxide. It is no unusual thing in a dental supply house to get a hurryup call over the phone for a "cylinder of gas" or a package of somnoform; more so in the case of nitrous oxide, there being no known way at the present time of telling when there is sufficient nitrous oxide in a cylinder to anesthetize, and ofttimes patients have to be sent away until a new supply can be obtained, making it uncomfortable and expensive to both patient and dentist when it could easily be avoided.

Our advice, if asked, is to purchase goods in quantity lots and take advantage of all discounts for cash. That does not mean to purchase supplies simply because they are low in price (remember that the best isn't any too good for use in the mouth), but on standard articles such as teeth, crowns, alloy, burs and innumerable other articles that do not deteriorate, no matter how long they are carried in stock, do as the

successful merchant does. Your quantity rates enable you to carry a stock, and your cash discounts will more than pay your electric light bill and many other miscellaneous office expenses.

Collect your accounts. Send bills when work is completed, and send statements at the end of the month. If money is not forthcoming in due time write a polite note and ask for it. Some dentists we have known, especially in rural communities, take negotiable notes where patients do not have ready cash. Some will say: "Why, I couldn't do that; it looks too much as if I was in the grocery or coal business. Besides, they are all right. They'll pay when they get around to it." Generally they do pay when they get around to it, we hope. Did you ever notice that the coal man or the grocer is able to send his wife abroad, or his daughter to college, or build palaces near the sea? Do you know of many dentists in the same position? Yet the dentist renders more valuable services than does either of the worthy tradesmen.

If your patient is a business man or woman, the mere fact of sending him or her a statement does not call for any violent outbreaks on his part. Perhaps you get your check promptly if you do send statements, or a response anyway, but do you always get it if you do not? The longer an account is allowed to run, the harder it is to collect, and the harder it would seem for the person who owes to pay. Most of us object to paying for dead horses, and until dentistry is better understood by the masses it bids fair to be considered as such. The dentist himself can help to put it on a higher standard if he desires. Will he?

Numerous dentists have asked us if such and such was a good investment. It isn't possible for anyone to always foresee whether an investment is to be a success. Suffice to say that anyone competent to lay aside surplus wealth should be competent to invest it. Professional men seem to be easy money for the man with schemes, and the more visionary they are the easier they seem to catch the unwary.

To run an office economically should be the dentist's aim, but to practise false economy is a sin. We know of a prominent dentist who absolutely refused to buy a box of safety disks for the valve of his vulcanizer, but instead preferred driving old instruments into the valve to blow off instead, with the possible result of doing $500 worth of damage to the building in which he was located when the inevitable explosion came, and incidentally injuring for life one of his employees.

Another dentist refused to put in a fountain spittoon for no other reason than he thought the price was too high. One day his assistant, in making one of her many pilgrimages to empty the old tin spittoon with its unsightly contents, accidentally tripped over a chair and spilled

the contents of said spittoon on his beautiful $400 Bokhara rug, the dentist having been an amateur collector of rugs.

Daily do we see opportunities that dentists lose to increase their standing in their communities, all because they do not study local conditions, and while we must all at some time take vacations as a suggestion, we believe that the man who wants success could not put in a better vacation than by studying the methods in vogue among pronouncedly successful dentists. At least such study is worth their efforts.

G. F. J.

SOME COMPARISONS

By T. Ledyard Smith, New York

New York city supports four lawyers and three physicians to every dentist.

The lowest lawyer's fee is never as low as the lowest dental fee.

The highest annual income of any single dentist in New York is not in the same class with the highest law incomes or the highest surgeons' incomes.

The weekly salary of many vaudeville artists is larger than the gross income of the average dentist for the entire year. And out of this gross income the dentist must run his office and pay all his business expenses. What remains he may then consider his salary, which is shrunken to that of any ordinary clerk, and to much less than the average earnings of a salesman of the road.

Vocal teachers who get less than four dollars per hour are nobodys in New York in these days as vocal teachers, and many get six dollars per hour.

Many a fee for dental services is on a par with that of the Notary Public, whose fee is fifty cents; or of the waiter, whose tip is never less than twenty-five cents along the "White Way," and is often a dollar in several exclusive places. These same waiters may, and do, have dental services where the professional fee is often as small, if not smaller, than some of the tips they receive during the evening's work.

No other profession requires for its practice an outfit of such magnitude or cost or the constant use of supplies of such value. These must be constantly replenished by the dentist from out of his earnings.

Here are two extremes: High maintenance cost and low fees; and where they exist they operate for strained conditions. The extreme of high cost seems necessary and must be met; the other is unnecessary

and should be corrected. It is in keeping with this idea to say that the average dental office is better kept in point of equipment, furniture, instruments and stock of every day call than any similar office of years ago.

The argument of this story is plain: that dentistry does not bring in the income that may be found in other professions; that dentists are compelled to carry and constantly replenish a stock of accessories that involves considerable capital, and that they do so without taking into consideration its bearing on their expense account and without making provision for it in their fees or income.

Dental fees to-day are not higher, generally, than they were twenty or thirty years ago, while the expense of supporting an office is very much more than it was then by the very force of progress in dentistry. This progression has forced on dentists a constantly growing account, which should be met in the same way that manufacturers of teeth meet the higher market price of platinum.

The average dental office to-day is better equipped in every way than the few very best offices of twenty-five years ago, while this average office is run on those same old-time fees.

Had all dentists commenced twenty or thirty years ago to train the public into a higher and proper fee system, dentistry to-day would be out of the cheap rut of low fees and would be well able to meet this growing expense account.

The esteem in which dentistry is held by the public generally is about on a par with their estimation of it years ago, and they show this plainly by an unwillingness to pay any bill in excess of some cheap limit set by themselves. In reality this limit is but the reflection of the professional estimate.

Because this value has been kept low by the very men who should have raised it is no reason for a failure to commence now and correct a condition that has made dentistry poor, niggardly and cheap, and which favors fees that compete with those of barbers, waiters, Notary Publics and similar callings.

There is no argument whatever in defense of low dental fees. On the contrary, every argument favors higher prices than dentistry has ever seen. One point of great consequence which is generally overlooked is that dentistry to-day is more than double, no, it is twenty-five times better than it was twenty-five years ago. It is each year giving the public just that much better—more advanced dentistry. In return, like—well—like unthinking, silly people, dentists are asking the same old fees that make up the same old incomes.

Dentistry as an art or a science, or whatever broadly comprises

dentistry, has year by year in its advancement kept pace with the progress of the world in other matters. But during these years dentists, in regard to the fee system, have stood still.

To sum up: dental services each year increase in value to the public. The expense of running an office increases each year. The fees for dental services generally are no larger than of old.

Must we remain the least paid of all professions?

EDUCATING THE PUBLIC

By Frederick Crosby Brush, D.D.S., New York

Whenever anything occurs in medical practice that might be of public interest, an account of it usually follows in the public press. In this way the public is kept informed regarding the progress of medical science and of what the profession in general is doing for the welfare of the people; in other words, the education of the people keeps pace with the progress of the physician.

Dental science has been making gigantic strides these past few years, and it is now generally recognized by medical men that the health and comfort of the entire body may be, and frequently is, dependent upon the maintenance of a healthy condition within the oral cavity; and yet the general public still looks upon the care of the teeth as an unnecessary luxury and something that may be neglected, or the teeth even sacrificed with impunity. In this connection the dental profession has not been doing its full duty, either to its members or to the public. The public cannot be expected to appreciate the dangers existing from decayed teeth, or the health and comfort to be derived from good dental services, unless the profession sees to it that it is properly informed regarding such matters. About the only information that the public has received in a general way has come through the advertisements of men who are looked upon by the profession as being charlatans. Every professional man knows that most of these advertisements contain statements that are wholly false or are intentionally misleading, and are made for the sole purpose of exploiting a gullible public for the benefit of some individual.

Such a condition having been allowed to exist for a considerable period with no apparent effort being made to offset or correct it, has cast a decided reflection upon the integrity of the entire profession. From a misinterpretation of the spirit of the written Code of Ethics the conservative members of the profession have kept hidden from

the public under their aims and purposes and have left the entire field of public education through the public press open to the charlatans and incompetents.

It would seem high time that something practical was done to offset this baneful influence of misinformation and deception, and with this in view the following suggestion is offered:

Have a Publicity Committee formed in every dental organization, national, State and local; the members of these committees to be very carefully selected, their efficiency being the main desideratum. In the make-up of such a committee let there be at least one man with high professional ideals and broad culture; another one of good business judgment and some ability as a critic; and a third one capable of writing about professional subjects in a plain simple way that will be understood and appreciated by the general public. Then, whenever a paper or a clinic is presented before a society that contains anything that can in any way interest or instruct the public, let it be part of the duty of the Publicity Committee to prepare a report of the meeting, giving all suitable information in connection with it, and submit it to the local press for publication. From time to time let them arrange for the preparation and publication of special articles on such dental subjects as may be made of interest to the general public. Publicity Committees in various sections of the country might arrange to work in harmony and exchange such articles so that they might be made to reach the reading public in all parts of the country.

Another feature that could be worked to advantage would be to enlist the aid of professional men throughout the country in watching the public press, and whenever anything is printed that is in any way detrimental to the dignity or honor of the profession, have it clipped and together with all necessary information forwarded to the local Publicity Committee. Then let them in a dignified way, call the attention of the editor of that publication to the matter; impress upon him that dentistry is a dignified and learned profession that is engaged in a humanitarian effort to help the people protect their health and physical comfort and to preserve the most valuable organs of mastication and enunciation, and request that in the future he abstain from holding up to ridicule a body of men engaged in such a serious work. This might be followed up by offering to supply such a publication with articles on dental subjects that would be interesting and educational to its readers.

There are almost endless ways in which such Publicity Committees could work for the common good without any unseemly display or the objectional advertising of the individual.

Not long ago ten successful professional men representing medicine and dentistry met, at a dinner, the advertising managers of one of the leading New York daily papers and discussed with them the ways and means of offsetting the belittling impressions of the professions that are being produced upon the public mind by the deceptive advertisements of charlatans and quacks. The matter was discussed very freely from all viewpoints and all present seemed convinced that it was well-nigh time that something should be done toward supplying the general public with reliable information on subjects that are so vital to its health and future welfare.

Sporadic efforts are being made to reach the public by means of charitable organizations and free clinics for the poor and by the inspection of the teeth of the public school children; but the greatest factor of all in reaching the greatest number of people quickly is the public press. All progressive commercial men recognize this fact and take advantage of it, and now it is quite frequently made use of by men engaged in religious and legal pursuits; and it is not an unknown thing for men of the highest professional standing to be indirectly in touch with press agents whose business it is to see that their employer's name and achievements shall constantly reach the public eye.

The public press has reached such a state of influence that now it is probably one of the greatest factors in the general education of the masses. Being such an educational factor and wielding such a tremendous power it cannot now be justly said to be undignified for professional bodies to make use of such a means to teach the public the value of dental hygiene and dental services.

Aggressive men all over the country are realizing that the time is ripe and they are determined that dentistry shall come into its own. These men all have the honor and dignity of their profession near to their hearts, and will not intentionally do anything that will in any way lower the standards of the profession. They realize that this is an era of progress, and that new conditions are arising that must be met in a broad and liberal spirit if the profession is to keep pace with the changing conditions of the social and commercial world; so they are soon going to refuse to be hampered and held back by precedents that were established to fit the conditions of fifty years ago, or more. *Precedent* has nearly always been a brake on *Progress.*

REPLIES TO "WHAT WOULD YOU DO IN THIS DENTIST'S PLACE?"

How Can This Dentist Get Good Fees When His Competitors Get Less?

Mr. Editor:

I have been a reader of your magazine for just a short time, but I like it very much, and think it just the thing for new beginners and men of ordinary circumstances like myself.

I am a graduate of 1904, so I have had about six years' experience. I have about as good location and as up-to-date an office as any of the other three dentists of our city of 5,000 people. I get as good prices as any of my conmpetitors and think I do just as good work.

Now, Mr. Editor, I would like to ask some of our writers, how are we going to better our conditions financially when our competitors are "knocking" on the price?

Those men that have written in reply to the October issue * have brought out some good points well worth considering. But to my mind they have been overshooting the mark. They have not touched the tender spot yet. Mr. Editor, here is my question:—"How are we going to get $8—$10 for gold crowns, $2 and up for gold fillings, $6—$8 for dummies, $7—$10 for porcelain crowns, etc., when our competitors, who have just as good locations, can do just as good work, who have just as good office outfits and are just as good gentlemen as we are, charge only $5 for gold crowns, $4 for dummies, $1.50 more generally, $1 up for gold fillings, $5 for porcelain crowns, $10 for good rubber plates, and all other operations in proportion. How are we going to raise the standard of price or get more work to do under such conditions?" Take my case. I am not getting a $2,200 a year practice, and I'll venture to say that four-fifths of the dentists are not. I think from what I can gather, the average would be more nearly $1,500.

My patients say that I am too high with my prices. They say, "I can get this done over at 'So and So's,'" and some of them would show me their work done at "So and So's" office and it was just as good as I could do, and at a lower price, too. Here it is in a nutshell. How are we going to do the work when the other fellow will do it for less?

Our writers have been telling us to do better work. When the

* In the October issue of this magazine appeared a letter headed "What Would You Do in This Dentist's Place?" It attracted wide attention and brought several valuable replies which were published in The Dental Digest for December, 1909.

fact of the case is "the other fellow" is just as good as we are, he is just as intelligent, just as good a workman and has just as good and up-to-date an office.

Traveling men (salesmen) tell us our prices here are on an average if not better than elsewhere. So please tell us what we are to do with our competitor, or how are we to get more money when our competitor will not charge living prices for work done by him just as well as any other dentist could do it?

The result is that the cheap man is doing the work; for the best people, too. He does it just as well as I could do it, or any other man.

Will you or your correspondents answer?

Yours,

(Signed) R. R. M.

OHIO, *Dec.* 28, 1909.

Editor DENTAL DIGEST.

Dear Sir.—After reading over your article in the October DIGEST entitled "What would you do in this dentist's place?" I will give some of my ideas as to what I would do.

First I would make a few changes in my prices that would make them look better from the patient's point of view. Gold fillings I would put at from $2.00 up instead of from $2.50 to $6.00. Cleaning at $1.00 up according to the time. Bridge-work I would make at a uniform price even if I had to advance the price per tooth instead of having two prices on the same piece of work. The patient does not always understand why one tooth on a bridge should cost $10.00 and another and possibly larger one of gold, would only cost $6.00. Then as to the item of $2.00 treatments; he would think that his town would not justify such a charge; that is in case he charges that for each treatment, as very few people would be willing to pay for treating a tooth at that rate unless they were financially fixed so as to pay no attention to a few dollars. In case he charges $2.00 for treating a tooth until he restores it to a healthy condition, then that puts a different light on the subject. I don't see why it is worth more to treat a tooth than to extract it as the time used is about equal in my estimation. If he is charging $2.00 per treatment I would advise him to reduce the price on the treating item in order to save the teeth that are extracted at present time. These charges are more in keeping with the size of his town.

An overcharge has the tendency to drive patients away as they usually pay for the first treatment, and then go to some other dentist who does not charge for every treatment, or if he does it is at a lower rate. Am

glad to note that extracting the second year is less than the first year as that shows that there were more teeth saved the second year than the first. I do not like to see the items of fillings falling off the way they do for the second year as that looks as if he had been using crown and bridge-work on teeth that could be saved by filling. Advocating the use of crowns in place of fillings is often the cause of a patient going to another dentist. If the last dentist advocates a filling in place of a crown and fills the tooth then the first man loses a patient and the second one gains one and that patient's influence. It looks as though our friend was handicapped this way. I know of several dentists who practise this and use crowns where fillings are indicated. I have a case or two in mind at present: one where a dentist advocated crowning a cuspid with a gold crown just because it had a small cavity on the point of the cusp. This would look fine (?) in the lady's mouth. The other case was where a patient of mine wanted me to crown with gold the two central incisors. This I refused to do as they had small gold fillings in them and were in perfect condition. She finally went to this dentist and he crowned them with large unsightly gold crowns which would be the delight of a belle of the Sandwich Islands.

This lady has since returned to me for her work and has regretted that she did not take my advice and leave the teeth alone. She is very bitter against the dentist who crowned the teeth with gold for her. While it was her fault, he should have had enough pride in his work to advise against crowning in this case; but the easily earned $10.00 was too much for him.

In looking over his equipment in his operating room I see that he has only the foot engine. I would get a Ritter electric as I judge he has the current, for he speaks of the switchboard. He will find an electric engine easier on the patient than the foot engine; it is also easier on the operator.

Then in the laboratory I would have a Ritter electric lathe, pair of gold rolls and some form of casting outfit. Why should a dentist sell his scrap gold for 85c. per dwt. and pay $1.05 for it in plate form again when by saving his clippings that are free from solder he can make a plate just as good as any that he can buy? The pieces with solder on can be made into solder again by adding a few grains of silver solder to each pennyweight of scrap gold. This saves quite an item in a year, especially where the dentist has the time to work the gold over again; any man that has less than $3500.00 of a practice can get time unless he is too slow to catch cold. Next I would fire the office girl and apply her salary towards my electric equipment. This will pay for the electric engine and lathe and also a set of gold rolls in one

year's time. He can get time from the Ritter people and by paying them each month what he paid the office girl he would have them paid off in a year and would have the use and added appearance that these modern labor-saving appliances give to an office. Patients notice any improvement in the nature of new equipment in an office.

I do not think that any dentist with less than $3500.00 a year practice has any need for an office girl; unless he uses a hand mallet to mallet his gold fillings in with and has to have an assistant to do the malleting for him.

Then I would purchase two S. S. W. automatic mallets and do my own malleting. Next I would buy myself a residence in the residence section of my town as close to the business section as possible either on the principal street or on a street leading into the principal street, or else on a street running parallel with the business street but only one block away from the principal street. Here I would have my office and residence together and thereby save all my rent. This would save the office 'phone at $2.00 a month which would be $24.00 a year or enough to pay the taxes on the home. Put the 'phone in the residence side and it is a residence 'phone and any one calling will call the office over the residence 'phone. This gives the wife a chance to answer it when the dentist is too busy to answer. I have had my 'phones this way for a number of years and save 50c. per month on each 'phone. I would try to get a place with a lawn and garden, as this will give him something for recreation and profit also. The lawn can be beautified by flower beds and the garden can be made to yield from $20.00 to $30.00 worth of garden produce each year, as it only takes a very small spot of ground to raise $15.00 worth of vegetables in one season if it is planted and cared for right.

I know these things by experience, for after spending six and a half years in a flat with office in front, I purchased a home and moved my office into it. Have the office in two rooms at one side and entirely independent of the residence. I have three large windows in front of my chairs with about 35 square feet of glass in them. This gives me the best lighted operating room in the city. I have ample light even on dark days, and on days when the sunlight (it being a south light) would bother me I have white Holland shades to draw down to subdue the light. This gives an ideal light to work by. The place I purchased was in a run-down condition, but by spending $900.00 on it I have placed it in such condition that I could double my money on it, and that in less than two years from the time I bought it. When I talked of moving off of the principal street every one I talked to discouraged me and told me that my trade would not foliow me; but I

only lost in the first year between $200.00 and $300.00 and that I lost in the first eight months. Since then it has shown a steady increase until I think by the end of the second year I will be back to my old amount or even better than that. Patients tell me that they would rather walk a square on the ground than to climb up one flight of stairs. I saved the $300.00 rent that I paid for the flat and that offset the loss of patronage the first year. I paid nearly $2000.00 rent while in the flat before I bought my home. I hope never to have to live in a flat again with a dental office in front.

If our friend can save $2.50 a week or $10.00 a month when he was paying $10.00 office rent and $10.00 residence rent and $20.00 a month for office girl, then if he were in a home of his own he would save $50.00 a month which he could apply on his home. In our friend's town I would think that he could buy a home suitable for his residence and office for from $2000.00 to $3000.00 and by paying what he has saved up already he possibly could get time on the balance unless there is a Savings Bank or a Building and Loan Company in his town; if so, I would advise him to get his money out of that and by paying the minimum rate or double the minimum rate he would not use each month the $50.00 that formerly went for rent, office girl and savings. In about six years he would have the place paid for and then he would have still ten years in which to lay up a nest egg for old age. One should never say die until one is dead, but should always look for the bright side of life and always think that the future will be brighter than the past. Always give your patient the very best that you can do and always try to make the last piece of work the best, and, as Emerson says, "If a man can write a better book, preach a better sermon, or make a better mouse-trap than his neighbor, though he build his house in the woods, the world will make a beaten path to his door."

Yours fraternally,

L. O.

"BUSINESS BUILDING"

We reproduce herewith a very interesting comment which Dr. N. S. Hoff made in the November *Dental Register* on the Business Building Letters in the October DENTAL DIGEST. Immediately following it we publish an article by Dr. W. H. Trueman which appeared in *The Dental Register* for January. These articles should be read together. Dr. Trueman's article affords much interesting information not generally known. —EDITOR.

UNDER this heading our esteemed contemporary, THE DENTAL DIGEST, conducts a department in which business methods are discussed.

In the October issue a contributor from a small town in Indiana states his experience and shows that he is not saving very much money although he has the best practice in the town of three thousand people, with a good farming country also, to contribute. His total receipts for the year average about $2,000.00, and his office and living expenses nearly $1,900.00, leaving him a yearly profit of a little over one hundred dollars. Certainly not a great prospect ahead at that rate, and we don't wonder that he views the future with some anxiety, especially as he has a growing family that will become increasingly more expensive year by year. The dentist thinks he has exhausted the resources of his community and wants to know what he shall do, as he can't very well move to a larger town as he has no capital to meet expenses while building a new practice. We don't know the situation well enough to give a proper answer, perhaps, but we would venture a suggestion that comes to us from glancing at the items of his income. His largest income is derived from crown and bridge work, $560.00, next plate work, then amalgam fillings, gold fillings, treatments, extractions, and etc., to cleaning and polishing $77.00, inlays $32.00. It is easy to see what kind of a community this practitioner has to deal with and it may be impossible to change matters in such a community, but we are confident with a proper and determined effort this income could with a little thought, be materially increased. We venture to say that among those 3,000 people there are at least ten boys and ten girls between the ages of ten and sixteen that sadly need orthodontic treatment if the matter was properly put to the attention of their parents, and from two to five hundred dollars at least could by systematic effort along that line be added to that income. Then there was but $32.00 received from inlays, which at very low fees would mean only eight or ten inlays. Isn't there a better result possible in that direction, an income ten times greater even in such a community, is not an impossibility. But the one item in the whole inventory that staggers us most is that which reports an average of $77.00 each year for cleaning and polishing. At the dentist's own rates of fees, which he schedules at from one to five dollars, or at the lowest rate there is an admission that he cleaned and polished only seventy-seven people's teeth in a year, or one and a half each week. Now does it seem reasonable to suppose that in a community of over 3,000 people that only 77 such operations could be required in a year of time? From an experience of many years we are free to say that we have never seen a community where the people took such excellent care of their teeth that only one in forty of them required the help of a dentist each year to free his teeth from deposits which were threatening the health of his teeth and gums, and which he could not remove

by the utmost care with the personal mouth toilet. It may be that the people in that village take exceptional care of their teeth and so do not need professional service. We are inclined to doubt any such suggestion, and venture to affirm that every man, woman and child in that community not only requires but would gladly pay at least one dollar each year for a satisfactory cleaning and polishing of his teeth. At one dollar each, this would boost our country dentist's income nearly $3,000.00 at once, and he needn't make a plate crown or bridge or even extract a tooth or make an amalgam filling and live as well as he now does, and have a thousand dollars in the bank at the close of the year instead of $114.00. Yes, even better than that, for this kind of work would involve no great outlay for materials or office equipment. But suppose he could charge $5.00 for each treatment, or could treat each patient five times each year, which would be little enough for their best interests, see what a boost in that income he would have, $15,000.00, or a net savings in the bank of $13,000.00 each year! Why, my dear sir, you have a regular bonanza in your own dooryard and don't know it. Wake up and get busy with the most important work known to your profession. The people are really suffering for this very ministration which you are competent to give them. Read the third and fourth chapters of the book of Jonah, and pray that the Lord may turn your eyes and thoughts towards Ninevah,—I don't know as that is the exact name of your town,—but come out from the shadow of the gourd vine and hearken to the Divine call to duty, and cease to complain because the Lord doesn't prosper you as you think you deserve. Get busy with the real work and your fears of the future will vanish.

"BUSINESS BUILDING"

By William H. Trueman, D.D.S., Philadelphia, Pa.

Business building is in the air. Not only in dentistry but in all lines of work, by which an honest living may be made. The suggestion in your editorial comment on page 552 of the November *Register*, is in line with much that has recently appeared in dental journals under a like heading. The commercialism involved is rather rasping to ethical ears, nevertheless, the prosy fact of food wanted, the need of lodging, clothing and provision against the time when advancing years makes a grasshopper seem a burden, will intrude to break the rhyme of charming poetry, and mar by discordant notes the enrapturing

melody of "how we would like things to be." How to get more business, and how to make business return a larger profit, is to-day the vexed question over which many minds are pondering. In the commercial world, some have solved it to their own satisfaction by combining together to economize production and to open new and to control existing markets. This is called on the one side, thrift, energy, business enterprise, philanthropy, and other endearing names. It has, indeed, in many ways advanced public interests, made remunerative employment for many, added to the comforts of life, and made many waste places blossom as with roses. It has opened new avenues to commerce and to civilization, and in a thousand and one ways has proved a public blessing. However, in doing all this, it has caused some to suffer, and inasmuch as the more visible profits have landed in but a comparatively few hands, those bringing it about have been stigmatized as greedy, soulless corporations and conscienceless trusts.

Some of your suggestions, Mr. Editor, are a like combination of good and evil. It is undoubtedly true that in a town of three thousand inhabitants are many needing dental work and suffering for the want of it, many, perhaps, who are well able to properly remunerate a well qualified dentist. It was an excellent idea that of the wise old mouse who suggested belling the cat; but, how to do it was a vexed problem. It is an excellent idea to bring to the notice of the public the evils arising from neglected teeth other than those announced by a raging toothache, but, how shall it be done? Nicely written readable books and booklets, pages and paragraphs in the newspapers, and lectures now and again, are the oldest forms of dental literature and dental instruction extant, we may trace them back to the year one. That they are still called for seems evidence of their ineffectiveness. The catchy business advertisement seems far more effective, if it is true, that the advertising dentist is usually a busy dentist. It is true, undoubtedly, that quite a number of the more useful improvements in dental art have been introduced to the public and to the profession by the advertising members of the calling. Who introduced amalgam? Who brought to public notice the decided advantages of porcelain artificial teeth over the old time, disgustingly filthy bone dentures? Who made crown and bridge work popular? How were porcelain inlays introduced to the public? These ideas were "old as the hills," well known to the well informed, but were dormant until enterprising dentists took hold of them and by public advertisements made them known to the public and by so doing forced the ethical members of the profession to take note of them. Of course it is a shock to our ethical members to know this, but, nevertheless, it is true. How we like to

rhyme of charming poetry, and mar by discordant notes the enrapturing

malign the natty Frenchmen who introduced the much-abused amalgam to the public of New York some eighty years ago, but what a godsend it has been to the public and to the profession! Who taught our New York friends that a tooth riddled by caries could be made to do comfortable service for years by an easily placed plastic metal filling? Was it not those same natty Frenchmen whom our honorable professional forefathers proudly claim the honor of having hounded out of the town? What they could not do the Frenchmen did. They demonstrated this decided advance in tooth saving, and created a demand for it, then our ethical forefathers took note and followed their lead. Later they did better than their teachers. By a like process was porcelain dentures forced upon the profession. Our Detroit friend took hold of porcelain fillings when they were known to only a few, and by his artistic skill, his mechanical ingenuity, and his persistent presentation of their merits to the public and the profession forced them into prominence as an artistic tooth-saving device. He was not ethical, but he had sufficient public spirit, and sufficient confidence in the thing he advocated to brave the odium, and deserves the credit of making porcelain fillings popular with the public and profitable to the profession. Crown and bridge work was on record more than a thousand years, known to all, but practised by but few until Dr. Shepherd plastered the whole country side with handbills and gaudy painted signs, and deluged the mails with circulars and pamphlets, and presto! as a result of all this, are not dentists the world over raking in the golden ducats by supplying the public with crown and bridge work? Unwilling as we all are too acknowledge it, truth compels us to admit that the advertising methods are the methods that bring results. We condemn the advertiser as thoroughly as some say their prayers, nevertheless, there is not in the world to-day a community, nor a dentist, that has not been bettered by what they have done. You are right, undoubtedly, that there is far more work to do in that little town than the complaining dentist gets; but, how is he to get it? Unfortunately, as a rule, business ability and professional skill and integrity are seldom found in the same individual. The ideal professional dentist starves, while the stigmatized and successful advertiser lives in clover, all the while ruining the patient's precious teeth. Our complaining friend would hardly like to go through that little community hunting orthodontia cases to help his bank account, nor yet to stand at his front door asking passers-by to step in and have their teeth scrubbed. To do either would most likely prove his utter ruin.

Your suggestion to add to his charges is excellent in theory. So could the grocer add to his profits by charging a few cents a pound more

for his sugar, and the dental depot would make a better showing to its managers by charging a dime more per tooth. This as you state, would be clear profit. Would it be wise? For my own part I have preferred the nimble, oft-repeated sixpence to the slow moving infrequent pound, and am quite satisfied with the result.

I fear, and fear very much, the outcome of a practice that permits a dentist to save but one-twentieth of his intaking. It is not so much the smallness of his intaking as the largeness of his outgo. Two thousand dollars a year, in a country town, may not be small, but the nineteen hundred dollars outgo seems quite out of proportion, and it is high time to take stock and see what can be done to mend matters. Are there not some nearby towns in which a branch office could be advantageously established? Prosperity is by far the most economical and the most effective ethical advertisement. The busy, pushing, prosperous man or the man who seems to be so, is the man of all others the world wants to help. A few years ago, *Harper's Bazar* invited the wives of men with moderate income to write how that income was used, and the published statements of how incomes of from $800 to $2,500 were spent proved suggestive reading. So far as the published accounts showed they came from good, wisely economical housekeepers, and yet the amount available for medical and dental attention was exceedingly small. Now, in the United States there are vastly more breadwinners, above the laboring and mechanic class, whose incomes are less than $2,000, than there are above. Clerks, teachers, men in public office, and many professional men, with average yearly incomes of less than $2,000. These small incomes do not allow much for dental work. Tooth cleaning at the rate of five dollars each, for a family of eight, would make a big hole in the allowance. It will be well for the "charge more" advocates to take note of this. A wider field, rather than a higher fee, is by far the safest proposition.

Dentistry does not stand as well with the community as does medicine because heretofore it has been all commercialism—physicians and surgeons have shown their public spirit by working for the public good. They have manned and maintained hospitals, erected and stocked medical libraries, their library buildings are ornaments to many cities. They look after the public health in various ways, and ways that are not "money getters" to themselves. A threatened epidemic of smallpox in Philadelphia was nipped in the bud by a squad of physicians under police protection making a midnight raid covering several blocks, routing men, women and children out of their beds and compelling them to be vaccinated. (It was illegal, but the only way to do effective work in that section.) A medical society started a movement and kept

dogging at it until we have filtered water; they have demanded improvements in sewers, cleaner streets, etc., all this making their services less necessary, depriving them of thousands of dollars in fees. Their prevention tends to impoverish the profession while doing a world of good to the present and to coming generations. Dentists have done none of these things, but are urging prevention of dental disorders as a panacea for lean bank accounts!! Now, Doctor, this is not criticism, it is merely giving a view not generally taken. Medicine and dentistry are radically different; nevertheless, there is much the dental profession could unselfishly do for the public good that can be profitable, thrashed out, and brought out, and if my comment tends in any wise to this end, I shall be very glad. We are in perfect agreement as to the vital points, however much we may differ as to details.

IS ANY DENTIST CARELESS?

Not long ago a mere newspaper man was amazed to hear an intelligent woman, who had taken a lively interest in the proceedings of the International Tuberculosis Congress in Washington, say that even dentists were sometimes careless about the precautions necessary to protect their patients from infection. Another woman who was present corroborated the statement of the first, and added that she had seen dentists use the same instruments on different patients without subjecting these instruments to antiseptic cleansing or, in fact, to any cleansing at all.

That any progressive dentist neglects to observe habits of extreme cleanliness, in this age of modern dentistry, we would believe reluctantly, but as a faithful chronicler of feminine small talk we repeat the conversation as quoted in order that dentists everywhere may know that sharp eyes are upon them at all times. Women are acute observers and especially of anything of an uncleanly nature. And although they do not always remark about what they have seen, they usually give it due consideration. No dentist can afford to get a reputation of being slovenly either in person or habits about his office. He should give no one cause to make a single remark about his neglect of the rules of hygiene and asepsis. To guard against this he should impress indelibly upon his mind a single word, and he should daily apply that word to everything about himself and about his office. It should be his watchword ever and anon. Can you guess that word? It's Cleanliness.—*The Dental Summary.*

YOUR SAVINGS

PITFALLS FOR HOUSE BUYERS

We are frequently in receipt of letters from dentists who ask that we publish articles on the subject of investments. One dentist writes, "I am making good money every year, but I am a child or worse on the subject of investments. Help me and others like me." From time to time articles of this sort, applicable to dentists, will be run.

Happy will that day be when dentists will need advice how to invest their surplus rather than suggestions as to how to acquire a surplus.—EDITOR.

NEARLY every man, especially one with a family, looks forward to the time when he can own his own home. To accomplish this frequently takes the savings of years. Therefore no other employment of savings is more important. Yet the path of the house buyer, whether he wants a home or an investment, is strewn with pitfalls. . . .

A house to be a good home or a safe or profitable investment must, first of all, be well built. In matters of building construction take nothing for granted. The average investor would not buy a bond without finding out all he could about the earning power and integrity of the company issuing it. A house involves a larger sum and a more searching investigation. Do not be satisfied with a friend's opinion but get expert advice. If the house buyer cannot afford to hire an architect let him get a builder or a carpenter and accompany him as he inspects the property. It takes an expert to find out if beams are the proper thickness, if good material has been used in building, and if foundations are adequate.

If the house is located in a municipality where there are building laws, great care should be taken to find out if these laws have been respected. The larger the city the more drastic the laws. Ignorance of these laws in New York City, for example, has caused thousands of house buyers to lose their property. Here is the way it works out: Under the New York law any house occupied by three families, no matter if each family numbers two or forty persons, is regarded as a tenement and becomes subject to the many restrictions of a tenement house. A barber on the East Side once saved up enough money to buy a little shop. There was a second story that he rented out to two families. As a matter of economy he thought he would sleep in the rear of his shop. The moment he did this his place became a tenement, and he was ordered to put up a fire escape and make many alterations, or turn out his tenants. Failure to do this meant a fine of $50 a day as long as the tenants remained. It took all his savings and all he could borrow on a mortgage to make the alterations. He was unable to carry the burden

and the mortgage was foreclosed on him. . . . Hence, no matter in what city you live, it is important to find out if the house you buy meets all legal restrictions.

UNSUSPECTED COMPLICATIONS

It frequently happens that vacant lots adjoin the house you buy. Here is another source of possible danger or loss. Before buying it is best to find out whether there are any restrictions on the property and whether you are able to enforce them. The reason is quite obvious. If you should buy a home next to a vacant lot and a man should then buy this lot and build a stable, a shop or a cheap flat house on it the value of your home would at once depreciate. It sometimes happens, too, that while a lot may be restricted as to the character of the house to be built there is no bar on the way the house is to be erected. For example, if your house is fifteen feet back from the sidewalk your neighbor might build his home up against the sidewalk, thus cutting you off from light. . . . A widow bought a small two-family house in the Bronx. There were no restrictions on the adjoining property, and a man built a machine shop next door. The widow's tenants moved out and she was left without income.

If houses passed from one owner to another without incumbrance there would be less danger to the buyer. But many houses are mortgaged, and the purchaser in many cases assumes the mortgages. Many people accept these mortgages blindly and then reap a whirlwind of trouble, expense, and often loss. When you buy a house that is mortgaged it is necessary to find out who holds the mortgage or mortgages, when these come due, and what rate of interest is to be paid.

THE DUMMY MORTGAGE FRAUD

The kind of person holding the mortgage is important. A savings bank or an institution is not likely to "call" a mortgage—that is, demand payment on maturity. On the other hand, an individual or an estate may need the money. The higher the rate of interest the more the property costs you. It is in the maturity of the mortgage that a large danger lies. Avoid mortgages that are liable to be called, because in this event you have to find a new lender and execute a new mortgage, which is sometimes expensive. This is especially true of a second mortgage, which has been the undoing of more than one incautious house buyer. The second mortgage should always mature before the first. If the first should mature ahead of the second the house owner often finds difficulty

in replacing it. In many cases the second mortgage is held by an individual who is often a friend of the man selling the house. The seller says to the buyer: "The holder of the second mortgage is a friend of mine, is rich and won't need the money for a long time." It has almost invariably turned out that the "rich friend" always wants his money when the mortgage matures and this often embarrasses the house buyer. It is good to remember that a holder of a second mortgage can foreclose as easily as the holder of a first mortgage. His claim is, of course, subject to the claim of the first mortgage.

Some unscrupulous sellers of property have been known to execute fake second mortgages in order to put a fictitious value on their property. A man in New York owned a house worth $18,000. There was a first mortgage of $15,000 on it. He executed a dummy second mortgage for $5,000. When he came to offer it for sale he said: "Why, this house is mortgaged for $20,000." As a result, he got $22,000 for it.

There is another pitfall in house buying, more easily hidden than the details of mortgages, and it has caused endless loss and worry to buyers. It is the assessment for improvements such as sidewalks, sewers, gradings, curbing and asphalt paving. These public improvements are made at the expense of the property owners, but the delay in apportioning the cost causes many complications. You get some idea of what these improvements mean when you find that in one city, which may be taken as an example, lateral (branch) sewers cost $1.25 a foot; sidewalks approximate ten cents a square foot; asphalt paving is $2.50 a square foot.

Many people buy houses and then find costly arrears of assessments piled up against the property. They must pay these arrears or the property is sold under their feet. Such hardship only results, however, when the house buyer has not taken the trouble to inquire about assessments before signing the contract for the house. A little investigation often saves a lot of money. Information about assessments may always be obtained from the assessor's office in the county or city where you live. When you make inquiry about improvements already made be sure to ask also about projected improvements. These will be a future charge on the property and it is good to know about them. . . .

Another item which often brings unnecessary expense upon the house buyer who makes no investigation is taxes. The laws governing taxes vary in different States. In New York, for example, if title to property is taken before the first Monday in October the buyer pays the taxes for the whole fiscal year preceding; if the title passes on or after the first Monday in October the seller pays the taxes. It is a very easy matter sometimes for a keen real estate operator to arrange that the buyer shall take title before the end of the fiscal year. If the taxes

in your State are not apportioned between buyer and seller, find out when taxes become a fixed charge on the property and arrange to take title to the property at such a time as will enable you to avoid paying taxes for the whole year.

SEARCHING THE TITLE

Nothing in the preliminary investigation in house buying is more important than the title, which is the claim to the property. Bad titles have caused house buyers more trouble than any other cause. The smaller the amount of savings involved, the greater should be the degree of care exercised in proving the title. Many persons make the mistake of trying to save money in "searching" titles. This investigation should be made by title companies or expert lawyers trained for the task. Proper search for a title often means going back a hundred years to government grants. A title company may charge for the work more than does a layman, but also it insures the title. The usual charge by the large companies is $40 for the first $2,000 of value and $5 for each additional thousand dollars. Thus the cost of searching a title for a $5,000 house would be $55.

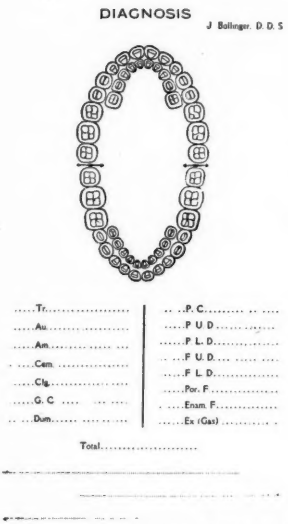
Having taken all the precautions enumerated and having become satisfied that the title is clear, the buyer now comes to the contract, which closes the deal. After this is signed there can be no changing of mind. Therefore the contract should be explicit and state the terms of the transaction. The contract should be drawn by a man familiar with the real estate business. It should recite all the details verbally agreed on by seller and buyer, describe all mortgages, agreements and restrictions. It must be remembered that the law takes nothing for granted; and unless the facts are set forth in the contract they are not legal nor binding.

If the house is not completed the plans and specifications should accompany the contract. In the opinion of experts it is an unwise step to buy an unfinished house, because contractors are liable to substitute cheaper material or change construction to suit themselves. As one old builder said: "I never saw plans or specifications that you couldn't drive a team of horses through."

The whole lesson in house buying, summed up in general terms, is: As in other kinds of investment make a careful expert investigation first and know just what you are buying before you pay over your money.—*The Saturday Evening Post.*

THE USES AND VALUE OF THE EXAMINATION CHART.

By J. Bollinger, D.D.S., Nyack, N. Y.



It seems to me that it would be impossible to conduct a dental practice satisfactorily without the use of the examination chart or diagnosis blank. I recollect the methods of an old practitioner along this line, who never made a record of his work. After examining a mouth he would set a price, trusting entirely to his memory to remember everything that transpired at this sitting. But his memory often failed him and he would ask the patient to locate the cavities for him or tell him the nature of the work he was to do.

To my mind this is a poor business principle. I have adopted a blank which I have printed to suit my own needs; of proper size for filling and having enough room to jot down all details and promises made to the patient. When a patient presents for examination, I lay the pad on the bracket, so that he can follow me, marking off each piece of work, making due explanation as to the advantages and disadvantages of the different kinds of work. Then I figure up the whole cost as nearly as possible and write it down in the proper place as you will see by the cut, so that the patient can see what he is getting and what it will cost. Very often young patients want a duplicate of the chart to show to their parents, and I never refuse it when requested. In this way I have the work before me always. Every morning in glancing over my appointment book for the day, I get out the various charts for those appointments and I can then readily see what work I am going to do for each one. I do not have to ask the patient which teeth I am going to fill—my chart tells me.

Then as time goes on and some old patient returns with a filling having dropped out, I consult her chart at once and determine whether or not it is one of my fillings. The diagnosis blanks make it very simple and you do for your patient just what you agreed to do and you will not have to ask your patient where the tenth cavity is after you think you have completed your work with only nine fillings. You promised your patient ten fillings and your chart will show you where they are.

BROTHER BILL'S LETTERS

Brother Bill receives the following letter from a dentist's wife, and writes very frankly in reply:

NEW YORK CITY, *November* 22, 1909.

EDITOR OF THE DENTAL DIGEST.

Dear Sir: I am a dentist's wife, and read with interest every month "Brother Bill's Letter," and may I take the liberty of asking Brother Bill to extend his letter to the wives of dentists, in helping to increase their practice. I for one would gladly like a little advice or suggestion. I am anxious to do all in my power, but it is rather a delicate matter to mention "What a skilful dentist your husband is" to the people you meet. I shall look with still more interest for "Brother Bill's Letters" and see what advice he would give the wives of "poor" dentists.

Very truly yours,

(MRS.) N——— H———.

My dear Madam: I'm glad to get your letter, because it gives me a chance to say some things I've often wanted to when I've visited other dentists and have seen how some wives hinder a man's advance, while others positively hold him down.

And I can write on this subject with authority, because I know where to locate a little woman who is just as much responsible for our success, professional and financial, as I am, and who, by the way, enjoys it just as well.

She drove with me to the office in the car this morning. As we rolled along the pleasant drive we talked of the day we celebrated our emancipation from debt by a modest ride in a livery rig at an expense of one dollar. That was one year ago. It has been all along a story of economy brightened with modest pleasure. The years have been busy, fruitful, happy, and so long as I can keep a good car and ride along pleasant roads with that same little woman I'm in the position of the little boy who didn't want to go to heaven because "home is good enough for me." And "Mrs. Bill" feels just the same way. I'm going to tell you how she earned half that car.

In the first place, we've been chums ever since our marriage. Maybe you don't think much of that for a practice-building activity, but it's bigger than most anything else a woman can do to help her husband. It's better than mere money; it's better than mere grit, and it has education beaten at the start. It's the source of more and more effective inspiration than any other one thing. We began so poor that she had

to make *mock mince* pie at Christmas, and when you can't afford real mince meat at holiday season you're pretty hard up. We coined a phrase then that still stands to us for being "hard up." That phrase is "gravy poor." We had to eat codfish and gravy a good deal of the time, because we didn't always have meat or butter. In those days I had more time than patients, and I embalmed that phrase in rhyme. This isn't poetry. It's the epitaph of an experience I hope may never be repeated.

GRAVY POOR

In the days before we got our start,
When we were gravy poor,
Codfish played a leading part
In household economic art;
'Twas served with gravy á la carte,
When we were gravy poor.

How oft I hustled to the store
When we were gravy poor,
And bought of codfish o'er and o'er.
And when 'twas gone I bought some more,
To keep the wolf outside the door,
When we were gravy poor.

The sight of codfish makes me sick,
Now we're not gravy poor.
We want to throw it out right quick,
Or give the plate a good swift kick;
And yet for us it did the trick
When we were gravy poor.

If e'er the codfish days return,
And we are gravy poor,
This humble sea-food we'll not spurn,
But often will our spirits yearn
For that Last Refuge where, we learn,
No one is gravy poor.

Mrs. Bill has been a constant, faithful, affectionate chum. No matter that affected us has been too small to receive her genuine interest. No circumstances have been too dark or gloomy to be met with a cheering smile. And there never has been a day when I have not been sent to my work with a conviction that success lay somewhere just ahead.

Maybe you think that's a little thing. Well, here's why it wasn't. With such a send-off I couldn't help smiling at the people I met on the way to the office. And a smile is a success look. It will draw more patients than any number of frowns. So I looked successful, even

when I couldn't have paid a bill for five dollars to save me. But, bless you, that look was just the reflection of the smile I had been started out with. And it made many a friend and patient.

Some dentists labor under such home disadvantages that I don't see how they can succeed. Only a few months ago I saw a case like that. The wife was one of those not-yet-dead martyrs who put up with their husband just because "Providence placed her there." She isn't smooth even in doing that. The husband was just an ordinary chap too far down to be brought out on occasion.

He liked to go around a little, and wanted to take the wife. But she wouldn't "chum." She grew steadily more careless about her personal appearance (a thing no worldly wise woman will allow herself to do), and she found more and more home tasks to serve as excuses for not joining his little trips, which, in her company, would have been innocent enough.

Now this dentist has a good-looking office girl, and finding her not unwilling to receive attentions, he bestowed them. The wife was a dog in the manger. She didn't want attentions, but she didn't want anyone else to have them. Between the wife whom he couldn't fire and the girl he *wouldn't* he took to drink. You can guess his finish. If his wife were mine I'd say, "You are a good woman, but you've got a manner that would drive a wooden Indian to drink. If you'll get a divorce I'll turn over to you every cent we have and all I can borrow."

Then all day long I knew that Mrs. Bill was hustling just as hard for our common good as I was, and that no pennies were slipping through her fingers. I couldn't do less than she did, and you may be sure that no effort was spared to at least keep my end up.

No matter how unfruitful the day there was always a happy homecoming. I've walked it for a week with only twelve cents in my pocket. But I never got to the home end of it without being welcomed with a happy smile. And after I'd had this for a while it became a wonderful bracer. The nearer I got to it the happier I began to feel in thinking about it. And as I thought my troubles began to slip away, till by the time I got home I didn't have any. Maybe it was codfish and gravy again for dinner, but across the table was a smiling face, the herald of success, that *had* to come. And when a man looks into a face like that daily he *can't* fail. If he's a man *he's got to win.*

Mrs. Bill went without things until we could afford them. Looks like a little thing does it? Not to me. I had a friend who was earning more then than I. He tried hard to get ahead, but his wife wore out and cooked out and threw out all he could make. And now, many years later, he's just where he was then.

When a wife can go to town and willingly take her happiness *just looking in the windows** because she hasn't the money to buy pretty things she loves and needs, it makes a man feel as if he'd rob a policeman but that he'd get the money. There are little knickknacks in our home now, bought with a few pennies in the "gravy poor" days, that a high price wouldn't buy from us now.

A few days ago Mrs. Bill wanted an ostrich feather, the price of which was $20. "Do you think it too much?" said she. Now to a mere man $20 seems a good deal for just a feather. But there suddenly came into my mind a picture of her as she sat many a day trimming over an old hat in "the gravy days" to make it look decent, and I knew in an instant that if she wanted to pay $20 or twice that for a feather she'd earned the right and the money. And she wrote her own check in her own check book to buy it.

Thus she built me so that I could build practice. But after she'd fitted me out to do the work (and let me say here that a pan of light biscuit has more value as a "fitter out" than a piano solo) she helped me do the work of building.

No, Mrs. H———, she didn't tell anyone what a good dentist I was, at least I hope she didn't. But I taught her how important it was to keep the teeth clean; how necessary that the children's teeth have early and frequent attention, and how necessary teeth, either natural or artificial, are to health. And when at the sewing circle the talk left the neighbors' reputations and got into matters of health, she said what she knew, if it seemed wise. She didn't try to appear wise. She just gave it in a popular way. But it was seed sown on good ground, and the crop was reaped in cash.

Many a woman hangs as a millstone around a man's neck who could not only carry her own weight but could put such inspiration into him that you couldn't keep him from being a success. And often enough it is a good, faithful loving woman who thinks she does well.

Now, Mrs. H———, you're really more important to the success of that practice than Dr. H———. First you've got to make Dr. H——— a success, and then help him to build the practice.

Your work will begin at home. Above all keep the home bright and cheerful. If you're blue, be blue after he's gone and can't see you. Have your blues as bad as you like and get it out of your system. You've got a big job in hand, and can't waste time and vitality "having indigoes."

Set a good table. If you can't cook, learn. Mrs. Bill can both cook and play the piano, but she had to cook a good while before we had a

* Someone has aptly called this a "dry shop." (Editor.)

piano, and her cooking helped bring it. Set a plain, cheerful table and grace it with smiles.

Your first, last and all-the-way-through thing is to be a chum. Go when he goes, come when he comes. Make it your business to be interested in whatever amuses him. Listen or sit by when he studies. Learn all you can about the beauties and importance of good teeth and the possibilities of good dental work. And when you get a chance pass the information along. But don't talk about Dr. H———. That may kill it all.

If you're a better financier than he is, run the business, or teach him to. But do it at home, unseen by the public. At least run the home wisely and economically. And here's a funny thing. When you have no money it isn't hard to be economical; there's nothing else to do. But when you first begin to climb the financial ladder, and a few hundred dollars are laid by, it's hard, very, very hard, to go without things then. But hang on till you really get a start.

Go into society and friendly gatherings moderately and wisely, and in every case wear that smile of optimism which is the outward sign of prosperity. Because everywhere you carry in the hollow of your hand the inspiration, the courage and the final success of Dr. H———.

So when Mrs. Bill sits back in that automobile which she helped earn, and really enjoys life, I'm just as happy as she pretended to be when she used to meet me at the door of the little house in the side street.

Many things of sorrow and joy have come to us since those bygone days, but if we lost now all that provides material comfort I could face the future again undaunted so long as that smile sped me on my way and welcomed me home.

And when my eyes open for the last time on the scenes of earth I hope they may open and close on the face of Mrs. Bill.

Considering the material she had to work with she did pretty well.

Bill

DIGESTS

A SIMPLE METHOD OF CHANGING THE COLORS AND MODIFYING THE SHADES OF ARTIFICIAL TEETH*

By Dr. F. E. Roach, Chicago, Ill.

In our efforts to secure the highest degree of mechanical perfection in our prosthetic work, are we losing sight of the artistic?

While perfection of fit and adequate strength are prerequisites to the greatest efficiency of all prostheic work, a failure in the observance of the cosmetic requirements is a reflection upon our esthetic sense. Granting that any artificial substitute for the natural dental organs should first of all be useful, it should at the same time be beautiful, and to be beautiful it must look natural, and in order that it may look natural it must be in harmony with that which nature has endowed its wearer.

In the selection of a set of teeth for the edentulous mouth, the two most important factors governing the proper selection are the form and color, and of the two the color in my opinion is of the greater importance. A study of Thompson's "Table of Temperaments" will be of great value in determining both the form and the color. Each of the four temperaments demands a distinct type of tooth, though the color may be variable. Dr. E. J. Perry, in his paper on the "Law of Harmony and Correspondence," classified his patients into two general types, viz., blonds and brunettes, and under this classification determines the colors—those for blonds running to the yellows and for brunettes to the grays.

In a general way this rule is of much value, and if followed will yield very satisfactory results. But in neither Thompson's "Table of Temperaments" nor Perry's "Law of Harmony and Correspondence" do we get it all. The variation of the shades of the different teeth is of equal if not greater importance.

There is probably no greater breach of the law of harmony and correspondence than the placement of improperly colored teeth in the mouths of our patients.

* Read before the Illinois State Dental Society, May, 1909.

There is surely no more frequent evidence of our lack of appreciation as a profession of the true sense of art than the glaring incongruities of color that are so frequently seen in porcelain teeth of various kinds in the mouths of people we meet in the various walks of life.

The manufacturers have done wonderfully well in their efforts to supply us with teeth true to nature in both color and form, but in neither form nor color can they supply all that is required to meet the great variety of conditions, and it is an admission of our deficiency in manipulative skill if we cannot meet the requirements with the materials that are at our disposal.

While I am not disposed to grant that the manufacturers have done all they could for us in the way of forms, and especially is this true of the molars and bicuspids in plate teeth, I do not see how it would be possible for them to supply us with a greater variety of shades and colors. And yet with all this great selection, it is often impossible to get the tooth with that touch of individuality and character so necessary to harmonize with the case in hand. This is especially true in crowns, bridges and partial cases.

Every practitioner of dentistry with any experience at all, and who has any pride in the artistic results he obtains, will, I am sure, admit the inadequacy of even the stocks of teeth carried by our largest dealers when it comes to the exact matching of a great many of the natural teeth adjacent to which we are so often called upon to place crowns, bridges and partial plates. How often have you said to your patient that you had looked over several big stocks of teeth and had been unable to find a better match than the one you are trying to apologize for? How often have you sent back, either by mail or by carrier, in your vain attempts to satisfy yourself and your patient with the color of some tooth being placed in the mouth? How often, in fact, have you actually gone in person and spent perhaps hours of your valuable time in search of this much desired tooth and after all be compelled to apologize for it if your patient was at all particular, and if not, you no doubt suffered the sting of dissatisfaction yourself and wished you might have done better?

When supplying full sets there is not the necessity for the exactness in matching up colors with the natural teeth that we have in crowns and partial dentures, but in order to secure the best results from a cosmetic viewpoint, there should be a difference of shade in teeth used.

According to the idea advanced by Dr. E. A. Royce, the normal shading of the full denture is as follows: The upper central incisors are the lightest in color and are taken as the standard by which the degree of shading is measured. Dr. Royce found, upon a close exam-

ination of several hundred mouths, that on an average there were five or six different shades in the full denture, either upper or lower. It should also be noted that the colors vary in intensity from one to eight shades.

Since the publication of this most valuable article of Dr. Royce's, I have made a study of his color scheme, or rather shade scheme, and I am thoroughly convinced that he is absolutely right, and I am of the opinion that it is one of the most valuable contributions to prosthetic dentistry in the past decade, and its teachings should be understood and practiced by every one of us.

The argument so often advanced that the majority of our patients do not appreciate our efforts in this direction, should not deter us from raising the standards of our services from an artistic point of view.

First of all let us educate ourselves and then educate our patients to an appreciation of the art side of our work. In my eighteen years of practice and ten or twelve years contact with infirmary patients, I have not yet seen one person who could not be made to appreciate the difference between harmony and correspondence, and monumental incongruities. In other words, most people will accept a set of teeth or a crown that looks natural in preference to that which stands as a monument to the lost members.

Though cognizant of the indifference of a great many of the profession to anything that pertains to prosthetic dentistry, I am nevertheless sufficiently optimistic to believe that the majority of the profession are still doing some prosthetic work and are interested in its betterment. Even though a portion of the work be assigned to a laboratory or an assistant, the most important part of the operation is that performed in the mouth. The success or failure of the case depends absolutely upon the execution and direction of each step in the operation that emanates from the chair. And surely the one who does the work in the mouth is held responsible for whatever it is, be it good, bad or indifferent; so that regardless of the boasts made by many that their time is confined exclusively to the chair, a large part of it is nevertheless prosthetic work.

It is the purpose of this paper to call your attention to the use of mineral stains and oil colors. While these materials have been on the market for a number of years, their employment has been directed more to the reproduction of freakish conditions than to the changing of colors and the modifications of shades. The impression prevails that these materials are only useful for producing the tobacco-stained dentin of abraded teeth, Hutchinson teeth and the like, when as a matter of fact, these are insignificant uses as compared with their employment in shad-

ing the teeth in full dentures, and in producing the mottled or clouded effects so often necessary in crowns, bridges and partial cases. And while the Royce shading may be carried out quite satisfactorily by selection from stock, the matching of the natural teeth with crowns and partial cases in this way is often impossible and for these cases the mineral stains and oil colors are absolutely indispensable to the man who is striving for the highest degree of art in his work. And the mastery of their use gives one a feeling of independence that is indeed satisfying. There are no cases of unusual coloring or shading that cannot be matched almost perfectly, and my experience justifies the belief that almost all of the porcelain teeth placed in the mouth will look more natural if a film of these stains be spread over their labial or buccal surfaces.

Now a word about the technique. The handling of these materials is so simple that it seems unnecessary to go into this phase of the question, and yet knowing how little they are used, I must conclude that they have either been misused and abandoned or have not been tried at all. In either event some instruction would seem necessary. The material must be reduced to an impalpable powder and when mixed with the water should be thoroughly spatulated, so that all lumps will be obliterated. The surface of tooth to be stained should be clean. The glaze need not be ground off, as has been recommended.

With a small camel's-hair brush moisten the surface of tooth and then dip brush into the previously mixed stain and with a stroke of the brush across the surface of the tooth the stain will be evenly spread where desired. The entire surface of the tooth should be gone over to obtain the best results, and care must be taken to avoid blotches by allowing the stain to accumulate in patches.

In the application of the colors to a tooth it is well to remember that it is easier to darken than it is to make the shade lighter, though the latter may be done very effectually in many cases.

It is not necessary that one become expert in the mixing of all the prime colors to produce the myriads of tints used in china painting, though a knowledge of the basic principles in combining some of these colors will be very helpful at times. When we consider that the predominant colors in the natural teeth are not distinctly prime colors, but combinations and blendings of colors that produce the grays, creamy yellows, browns and greenish tints, and that our mineral stains are furnished in similar combinations, it is at once apparent that we have to deal more with the modification of the shades of the colors as we find them rather than to the changing of the color altogether. For instance, if it is desirable to intensify or darken a creamy yellow tooth,

a thin film of brown on the surface will do it—a film of white over the surface will, of course, produce a lighter shade.

In the selection of teeth for full dentures it is best to get them a shade too light with the view of shading them as desired. As a matter of fact, it is possible with a medium light creamy yellow tooth to produce any of the darker shades and colors with a greater degree of accuracy than by selection from stock and at a great saving of time and bother.

The colors that will be most used are brown and gray, and as a matter of fact these two colors will meet the requirements in about 95 per cent of the cases. As an illustration we will, for convenience, refer to the colors of the S. S. W. shade guide and show how they may be changed at will with these two colors—for instance, shade 34 may be readily changed to 35, 36, 37, 39, 41, 42 or 43 with the brown—shade 34 may also be easily changed to 30, 31 or 33 with the gray. To change shade 34 to 32, 38, 40, 47, 48, 49 or 50, will require both brown and gray. A trace of gray over 27 will produce shades 28 and 29—shades 44, 45 and 46 have a greenish cast and will require a green stain. Shades 26 and 34, being very light colors, are easily stained to any desired darker shade. With equal facility any of the intermediate shades may be changed to the darker shades with one or the other or with the combination of both brown and gray to the extent that they will serve all practical purposes in the great majority of cases if the rule suggested above of selecting teeth lighter than wanted is followed.

Supplementing the brown and gray, I would suggest in their order of usefulness, yellow, black, blue, green and pink. Yellow serves best to lighten the brown, and black is preferred for darkening it, though blue or green may be used for this purpose. White is employed as an enamel to lighten the shade of a tooth of any color. It may also be employed to mix with other colors to make them lighter, though as stated above, the mixing of these colors is rarely necessary, as the intensity of the shades are governed by the thickness of the layer, and as has been shown, nearly all the shades on the guide can be produced with brown and gray.

In addition to S. S. White's Mineral Stains and Brewster's Oil Colors, I would recommend Lenox China Colors in the following colors: Ochre yellow, neutral gray, blue black, deep sea green and white enamel. The ochre yellow with a very slight amount of blue black added to it will make a greenish yellow brown that will meet the requirements in most cases for producing the various tints of yellow and brown—the intensity being easily determined by the thickness of the coat and by the addition of a larger proportion of the blue black. The

neutral gray may be intensified, when necessary, by the addition also of the blue black. The clove oil preparation furnished by the art stores is best to use with these colors.

In conclusion I want to emphasize the importance of this subject to all of us, and especially do I want to emphasize its value to the man who is located where he has not access to large stocks of teeth. As a matter of fact, the mastery of the use of some one or all of these stains will yield a larger return for the time and money expended for its accomplishment than anything that I can call to mind.

DISCUSSION

Mr. President, first, I would call your attention to the prominence of the teeth as a feature of the face. Even small children, but particularly persons who are educated, recognize a monstrosity in the shape of a porcelain tooth that is off color. People can tell whether it is off shade or not, and it is this that Dr. Roach has been trying for months and even years to remedy. I frequently hear girls of fifteen remark upon discolored teeth in the mouths of certain persons, or crowns that have been put in that look "so artificial," and if young people are educated in that manner, at the present time, it behooves us to be so educated that we can match these teeth, so that they will not be as conspicuous as if we had a gold shell crown in the front of the mouth.

The manufacturers have done a great deal for us in the way of teeth, but in the color of them they are not doing as much for us as they did five or ten years ago. I have had occasion, since working with Dr. Roach, to attempt to match up closely some of the shades by the shade guides I have had for say ten years, and I found the translucent effect at the points and the density at the necks of the teeth have been done away with to such an extent that we have china teeth to look at when we return from the supply house. I may have sent along a shade guide and requested a match, but the tooth that was returned to me was entirely different in effect when placed in the mouth. We have no remedy with the manufacturers. We must devise a remedy ourselves, and this, we think, has done so.

Sometime ago I had occasion to talk with the manager of one of our large supply houses in regard to the shading of teeth, and he listened attentively to what I had to say. When I got through, he said, "Doctor, we do not care anything about your trade in teeth. We do not care to cater to people who are as particular as you are. We are making teeth for the men who are putting in 'bread and butter' teeth."

I told him I wanted a dessert tooth, and I have been hunting for it ever since. I think we have found them. We can get nothing further from the manufacturers as long as the establishments that put in cheap dentures purchase them in five or ten thousand dollar lots, as I am informed some of them do. Our purchases are exceedingly small as compared with theirs.

I see but one thing to criticize in Dr. Roach's paper, and that is when he speaks about exactly matching teeth in the mouth. I know of no tooth in the mouth but the central incisor that I would exactly match, and the central incisor, if it is one shade off, will hardly be noticeable if the artificial central is darker. Aside from the central incisor, in putting a tooth in the mouth to stand by the side of another, they must harmonize with each other but not match.

As to the effect of light in selecting teeth, it is an important feature. Almost without exception, if you send to a supply house for a tooth, and send simply a shade guide along, you will have returned to you a tooth that is a shade lighter than the one you sent. Their lights are the glary lights; they are equal to the strongest lights we get in our operating windows, with the light shining exactly upon the teeth. We know, when the teeth are in place in the mouth, that the direction in which the light strikes the teeth and its intensity have a great deal to do with the shade, on account of the difference in reflection and refraction of light by the different density of bodies, as well as the difference between reflection and refraction of light by the porcelain and the natural teeth.

Dr. Roach spoke of the variation of shades of teeth in the mouth. Perhaps you can appreciate what I think of that when I tell you how I started to study the shades of teeth. A good many years ago one of my fellow practitioners in a small town in the east came in and asked me to look at a denture he had put in for himself. My first question was where I could buy teeth similar to those he had in his mouth, and he said he could not buy them. He picked them from the odd teeth in his laboratory, and it was as natural a looking denture as I had ever seen. I concluded if that was the way we could get natural-looking dentures, there must be some way by which we could match teeth by imitating nature more closely than we have been able to do, and I commenced to study. I do not know how many mouths I studied in the next seventeen years. Then I began with a tabulation of shades in the mouth, examining every patient that came to me, making up the dentures of every mouth I could get shades of that were not affected by caries or fillings. I examined carefully some three hundred mouths, in patients from eight to seventy years of age, and rarely saw a mouth

making teeth for the men who are putting in 'bread and butter' teeth."

with two teeth of the same shade standing side by side except the very light, pearly, blue-white teeth, and in some of these I could not tell the difference of shade between the central and lateral, but the cuspids were darker. By shade I mean a perceptible difference. The thing we are after is to replace natural organs with artificial ones, which will match so closely that the difference will not be seen, and this can only be done by variations of shades in the selection of teeth. If you are going to insert a lateral make it a little darker than the central, but have a greater difference between the lateral and cuspid. The cuspid is the darkest tooth. The lower cuspids are of lighter shade than the superior. The lower centrals are of darker shade than the upper centrals; the lower centrals and upper laterals are nearly of the same shade; the lower laterals are darker than the upper laterals, and the first bicuspids are lighter than the cuspids. The cuspids are darkest, and you shade both ways to the centrals and second molars. Cuspids usually run brown. Even in blue teeth you will find a brownish-yellow or grayish-brown shade in the cuspids. No one ought to think of putting in teeth of one shade as substitutes for teeth that vary like that. I presume the reason this phase of the subject has not been more generally accepted is because of the impossibilty of matching teeth from the different sets. I have done it myself in many cases with satisfactory results, but never with as much satisfaction as it can be done with the use of the mineral stains.—*The Dental Review.*

CONTROLLING HEMORRHAGE IN SETTING CROWNS AND BRIDGES

In irritated conditions where the gums have a tendency to weep and bleed, treat the gum margin with a 15 per cent. solution of trichloracetic acid. I know of no other astringent that so absolutely controls such a condition in setting crowns and bridges and inlays, and at the same time having such a curative effect.—J. E. Argue, Red Lake Falls, Minn.—*Pacific Dental Gazette.*

A FEW THOUGHTS FOR YOUR CONSIDERATION ON RUBBER PLATES*

By C. B. Hall, D.D.S., Goldsboro, N. C.

I hope you will all bear with me for a short while and let me annoy you just a little on that dry old subject, rubber plates. Now, my brethren, I know some of you do very little or no plate work, but, be that as it may, some of us very common dentists have it to do or be idle at times.

The first case I wish to call your attention to is, we will say, Case No. 1. A gentleman acting as travelling salesman came to me and could not make me understand his name until he had removed his plate, which was a partial upper, after which he pronounced his name very distinctly. He then asked if this difficulty could be overcome, as it was a source of great annoyance to him in his work, for he had to be continually introducing himself. After locating, as I thought, the source of trouble, I told him I thought I could remedy the difficulty and proceeded to make him a new plate. About the only change of importance that I made was to reproduce the rugæ on the rubber. When the plate was placed in his mouth he could pronounce his name distinctly, so Dr. Fleming and he both said.

The next case we will call Case No. 2. This was the case of a preacher who, when he attempted to say *religion,* would say *leligion.* While possibly his congregation would fail to notice his mistake, yet he knew he made it and this embarrassed him. Nor could he trill an R. I made another effort to correct this man's speech by reproducing the rugæ and by using the eureka suction (for his mouth was as flat as the palm of one's hand). Now he can trill an R, and can say religion as distinctly as any man in this house.

So much for the reproduction of rugæ on rubber plates. If the absence of rugæ was not the trouble, what was it? And why could these persons articulate words after it had been reproduced which they could not articulate before? I am forced to believe that the natural rugæ have a function, and if it be not to assist in the articulation of sounds, what is it? And if this be the function, then should we not try to preserve it for our patients, instead of covering it up with a smooth piece of rubber.

In the next place, I would call your attention to that class of lower plate where there is scarcely a trace of ridge for the plate to rest upon. For several years I have used Weston's new metal for casting lower

*Read before the North Carolina State Dental Society, Charlotte, July 1-4, 1908.

dentures, and I find this material proving a great boon to those who are unable to wear with satisfaction plates made with rubber. The weight in plates made of this material seems to hold them in place so well that almost anyone can learn to use them with less worry than they can rubber.

Try these materials, gentlemen, and see if you don't like them.

I do not profess to be a "king cure-all" and a "never-failing success." I make failures and sometimes learn more by my failures than by my successes. I trust, therefore, that you may feel free to discuss this subject and to criticize my remarks. The better we as individuals do our work, the better our profession as a whole becomes. Our work is for the relief and benefit of mankind. If what I have said shall aid any of you to greater success, I shall be only too well pleased. If you have methods superior to mine I would be glad to know and adopt your plans for the benefit of all.—*The Dental Brief.*

TEXT ARTICLES vs. ADVERTISEMENTS

Some humorist has said that when he buys a magazine he tears off and throws away the text pages; he then gets his education by reading the ads.

There is no small amount of sense in this. Few magazine pages receive as careful consideration as do the advertising pages. There every word is considered from every viewpoint. The illustrations are carefully prepared and are very expensive.

The advertisements record the progress of the profession on the instrumental and mechanical sides.

The advertisements in The Dental Digest alone make such a magazine possible. To just the extent that The Business Department brings in revenue from advertising can the editors improve the magazine.

If The Dental Digest helps you, help us make it better. To do this read the advertising pages, and when you see something you want, buy it from a Dental Digest advertiser. If you write for literature, mention The Digest. So will advertisers be justified in continued or greater expenditure, and The Digest be bigger and more helpful.

EDITORIAL

"HOLDING OUT TO WEAKLINGS THE BAIT OF LARGER PROFESSIONAL RETURNS BY THE ADOPTION OF SO-CALLED BUSINESS METHODS IN PRACTICE"*

By the Editor

The *Dental Cosmos*, from which the above heading is quoted, is entitled to the respect and confidence of every practising dentist. For many years it has stood as one of the great educational forces in dentistry. Through its columns much of our best literature has been first given to the profession.

Many of its admirers will regret some of the things in its editorial in the February number. Nor will they relish being thus summarily dubbed "weaklings" simply because they may profit by adopting business methods.

Let us dispose of certain fundamental considerations and then inquire whose fault it is that we may thus be called "weaklings," and see what part those magazines to which we have so long looked up, have played in making us weak.

First. Dentistry as a means of service, with all of theory and practice that is implied in the very best service we can render, is a profession.

Second. Dentistry as a means of livelihood is not a profession, but is a plain business. The principles which underlie success in winning and holding patients, in securing adequate returns for our service, in wise buying of supplies, in supporting ourselves and our dependents now and in days to come, are precisely those which determine success or failure in any business venture. There is no necessary connection between high professional ability and a busy practice, because bad business habits keep many a skilful dentist from enjoying full practice. And it would be easy to show from data at hand, that many a skilful and busy dentist knows so little about how to sell his services for adequate fees, that he does lasting financial injustice to himself, his family and his competitors.

Third. Money-making is not the legitimate *sole aim of* dentistry. It is *one* of the legitimate and necessary aims. Our first duty as dentists is to serve our patients to the best of our ability. And no effort is too great by which we render such service.

* This title is a quotation from the editorial in *The Dental Cosmos*, here referred to.

But when the service has been rendered on this plane, it is equally legitimate to see to it that the patient remunerates such service in proper degree. And " proper degree " does not mean that the remuneration shall habitually be just large enough to keep us out of the " Poor House." The dentist who renders adequate service is entitled to adequate fees from patients who are capable of paying such.

Fourth. A " man's life consisteth not in the abundance of the things that he possesseth." It is the duty of every dentist to advance, by so much as in him lies, the general interests of the profession. But this duty must not displace the acquirement of worldly goods. During his life those dependent on him are entitled to support and to advantages in keeping with his standing in the community and his worth to humanity. And when the dentist is old and poor and feeble, he cannot call on the profession to support him and his.

Fifth, and summary. Dentists are just like other men, bound to do a man's work in the world and entitled to and dependent upon a fitting financial reward. Like others, they get that reward only in so far as they are able to command it on purely economic grounds.

Let us see how far the average dentist has gone toward commanding that reward.

Twenty per cent. of us are without commercial credit. These men cannot get even the supplies necessary to conduct a practice, except for spot cash. One of the largest mercantile concerns in the world says that only ten per cent. of the people, as a whole, are dishonest. That " as a whole " takes in everybody. Yet out of 32,000 men, separated at least to a degree from the less desirable classes by educational requirements, twice ten per cent. are without credit. It is not because of dishonesty; it is because of the prevalence of poor business methods that they lack credit.

Over against this twenty per cent. may be set a certain percentage of dentists who are notably successful. We don't know what percentage they form, but it is shown to be small, because after eliminating the twenty per cent. of " no-credits " nearly seventy-five per cent. of the practising dentists buy their furnishings in small instalment payments, and pay interest for the accommodation.

Between the extremes of prosperity and insolvency most of us stand. Our dental supply bill, aside from precious metals and furniture, averages about $20.00 per month. Yet fifty per cent. of us are slow in paying it, so slow that we pay twenty-four per cent. interest per annum on the sum involved, because our business methods do not provide ready funds to take care of this small sum the first of each month. It is probably a safe estimate that the average dentist

earns only about $1,400.00 * per year above the cost of conducting his office. Part of this is frequently uncollected.

This is not an adequate professional reward. Under present conditions of living, it represents not even comfort to the man who values home and children and desires for them those advantages concerning which his own education has enlightened him. An average family in this country is five persons, father, mother, and three children. And only under unusual conditions can a professional man support such a family properly on $1,400.00 per year.

No conception of dentistry is right or just which neglects these economic elements of our lives. We are entitled to comforts and rational luxury. The editor of *The Cosmos* has associated so long with the successful men of the profession that he may have forgotten a little about the average man. But thanks to you readers of this magazine who have sent in the facts concerning your practices, actual data is at hand, so that our conditions can be authoritatively stated.†

WHOSE IS THE FAULT FOR PRESENT CONDITIONS?

The fault falls upon three classes; upon our dental colleges which graduate us as business ignoramuses, into a world where business ignorance means failure; upon the dental societies which might remedy, at least in part, the shortcomings of the colleges; and upon those dental magazines which have been to so many of us, leaders and teachers. The magazines found us ignorant; they might have made us wise. *The Cosmos* might have lifted the whole dental profession to a plane far above its present condition. It might have made us better and bigger men by making us worldly wise, as well as professionally wise. And great as is the work it has done, noble as is the fame it has won, neither is as great as if it had done its *whole* duty.

But not until THE DENTAL DIGEST deliberately took up the campaign for good dental business methods, did anyone dare to speak of them above a whisper.

WE ARE NOT WEAKLINGS

We are potential giants bound down by the mistaken teachings of the past.

* These figures are based on what data can be obtained and leave out of consideration practices of $8,000.00 gross and over, per annum.

† It would help me greatly if more dentists would send me data for such uses. I want the average gross practice for two years, the cost of conducting the practice, and the net amount saved annually over all expenses. It will be held as confidential.

There is within each dentist the power to rise for his own individual improvement, to lift his practice to a plane of at least approximately adequate financial reward. Hundreds of dentists are now doing it for the first time. Against competition, against old theories, against their own inward questionings, they are winning better rewards for themselves and their dependents.

We should never have been even open to the charge of being weaklings, had magazines like *The Cosmos* done their whole duty by us. But our leaders so long taught narrow and cramped views of ethics and professional duty that these became part of our lives.

Meantime some of these very leaders have not practised exactly what they have preached. They have done well for their fellow men and we are better off because of their labors. But they have given much careful attention to their own careers. "With the sharpened instinct of acquisition," they have raised themselves from humble beginnings to places of profit as well as honor. They have taken care to exercise the best of business methods in their own behalf. And that such is the case is not in the least to their discredit. Only, they must not seek to prevent our using the methods by which they rose.

The handwriting of a coming change is on the wall. A new gospel is in the air. It is not a gospel of commercialism where commercialism does not belong. It is a broader conception of dentistry because it takes in the dentist's duty to himself as well as to his patient. It is fuller of promise for the average dentist than were the conceptions of the past. It is the gospel of "Good Service for Good Fees."

Our esteem for *The Cosmos* is great. Let it accept the new order of things, because it can neither stem the advance of an awakened profession, nor turn it back into the narrow banks of its former channel. Let it turn from the attitude of this editorial and be again our wise and powerful leader. For the die is cast; and if it awake not to new conditions its influence will wane, and we shall be weak where it might have kept us strong, and wrong where it might have kept us right.

The article, "A Wife Who Helps," by "A Dentist's Wife," has been unavoidably delayed till the April number. It is too good to crowd. It is expected to take Brother Bill's place in that issue.

DINNER TO DR. G. V. BLACK

At the Congress Hotel, Chicago, there were gathered on the evening of January 29th about 400 dentists to do honor to the Grand Old Man of our profession. All quarters of the globe were represented. Each guest found at his plate two souvenirs which he will long cherish. One was the ménu, made into a souvenir by the portrait of Dr. Black on the first inside page, and some interesting information. The other was a list of Dr. Black's writings. It excited admiring comment, not only because of its length, but because of the wide range of his thought.

Following the dinner came the toasts. Dr. Gilmer's reminiscences were interesting and informative. The address of W. A. Evans, M.D., Commissioner of Health of the City of Chicago, should ring on the ears of every practitioner of our profession. Dr. J. Leon Williams responded in his usual graceful and inspiring manner, as did the other speakers.

Here is appended a condensed life of Dr. Black. May he be long spared to us whom he has so greatly benefited, and may manifestations of our appreciation sweeten the years that he remains among us.

GREENE VARDIMAN BLACK

D.D.S., Missouri Dental College, 1877.
M.D., Chicago Medical College, 1884.
Sc.D., Illinois College, 1892.
LL.D., Northwestern University, 1898.

Born near Winchester, Scott Co., Illinois, August 3, 1836.
Family moved to farm seven miles southeast of Virginia, in Cass Co., Illinois, in 1845.
Attended country school about three months each winter.
Studied medicine with Dr. Thomas G. Black, a brother, at Clayton, Ill., 1853-1856.
Studied dentistry with Dr. J. C. Speer, Mt. Sterling, Ill., 1857.
Practised dentistry at Winchester, Ill., 1858-1862.
Enlisted in 129th Illinois Volunteers, 1862.
In hospital at Louisville, Ky., six months, and discharged for disability, 1863.
Practised dentistry in Jacksonville, Ill., 1864-1897.
Joined Missouri State Dental Society, 1866.
Joined Illinois State Dental Society, 1868.
First important dental paper on "Gold Foil" read before Illinois State Dental Society, 1869.
President Illinois State Dental Society, 1870-1871.
Invented one of the first cord driven, foot power, dental engines, 1870.
Lectured on pathology, histology and operative dentistry, Missouri Dental College, 1870-1880.
First President of the Illinois State Board of Dental Examiners, 1881-1887.
Wrote book "The Formation of Poisons by Micro-organisms," 1884.
Professor of Dental Pathology, Chicago College of Dental Surgery, 1883-1889.

Introduced teaching of Dental Technics, Chicago College of Dental Surgery, 1887.
Wrote for the "American System of Dentistry," chapters on "General Pathology," "Dental Caries," "Pathology of the Dental Pulp" and "Diseases of the Peridental Membrane," 1886.
Wrote book "Periosteum and Peridental Membrane," 1887.
Voted life membership in Illinois State Dental Society, 1889.
Professor Dental Pathology and Bacteriology, Dental Department, University of Iowa, 1890-1891.
Wrote book, "Descriptive Anatomy of the Human Teeth," 1891.
Wrote series of articles entitled, "The Management of Enamel Margins," "Dental Cosmos," 1891.
Professor Dental Pathology and Bacteriology, Northwestern University Dental School, 1891-1897.
Chairman Section on Etiology, Pathology and Bacteriology, World's Columbian Dental Congress, 1893.
Report on Dental Nomenclature, World's Columbian Dental Congress, 1893.
Wrote Series of articles entitled, "An Investigation of the Physical Characters of the Human Teeth in Relation to Their Diseases and to Practical Dental Operations, Together With the Physical Characters of Filling Materials," *Dental Cosmos*, 1895-1896.
Dean and Professor of Operative Dentistry, Dental Pathology and Bacteriology, Northwestern University Dental School, 1897, and at present.
President, National School of Dental Technics, 1897.
President National Dental Association, 1900.
Awarded First Fellowship Medal, by the Dental Society of the State of New York, 1905.
Special guest at Annual Meeting of American Dental Society of Europe, 1906.
Wrote work on "Operative Dentistry," in two volumes, 1908.

BUT ONCE

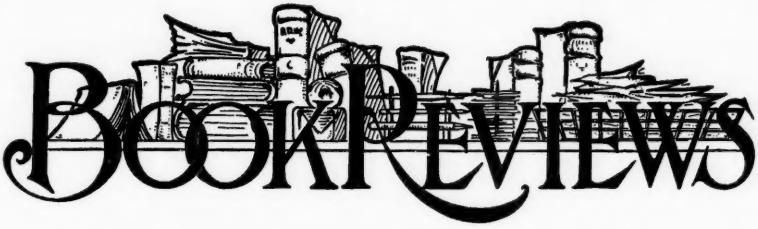
I SHALL pass through this world but once. Any good therefore that I can do or any kindness that I can show to any human being, let me do it now. Let me not defer or neglect it, for I shall not pass this way again.—ANONYMOUS.

THIS DENTIST HAS ONE STEP YET TO TAKE: TO DISCOUNT HIS BILLS

"THROUGH the influence of 'Brother Bill's Letters' I have raised my fees on January 1, 1910, in some cases 50 per cent. I have not had the first kick coming, and I mean, if spared, to have a competence at fifty-five years. Have started to pay cash for everything.

"Yours truly,

"C. P. M."



DENTAL DIRECTORY OF ILLINOIS. Published by the COMMITTEE ON DENTAL DIRECTORY OF THE ILLINOIS STATE DENTAL SOCIETY, 31 Washington St., Chicago, Ill. Price, $2.00.

Every one concerned benefits from such a list as this. Any society knows how many men any given territory should contribute. The dentist whose patient is to move to any part of Illinois can furnish the names of dentists in that locality who should be trustworthy. Many other benefits also result.

The lists in this directory are published in three arrangements. List I is an alphabetical list of all cities and towns, with the dentists in each arranged in alphabetical order.

List II is arranged in accordance with the territory within the jurisdiction of each component society of the Illinois State Dental Society. This list is an exact duplicate of List I, excepting that all cities and towns in the territory of each local society are arranged in a separate group. In this list the Chicago territory is divided into nine societies, and the names are arranged in accordance with street locations.

List III is an alphabetical list of all dentists in the State with page numbers after each name indicating where same may be found in Lists I and II. An explanation of abbreviations, etc., precedes each list.

It is hoped that every dentist in Illinois will be the possessor of a copy of this Directory.

SOCIETY AND OTHER NOTES

Officers of Societies are invited to make announcements here of meetings and other events of interest.

ARIZONA.

There will be a meeting of the Arizona Board of Dental Examiners on the 18th, 19th 20th, 21st day of April at Tucson, Arizona. Candidates should have their application, and fee of $25.00 should accompany same, at least twenty days before meeting.—W. A. BAKER, D.D.S., *Secretary and Treasurer.*

ILLINOIS.

The forty-sixth annual meeting of the Illinois State Dental Society will be held in Springfield, May 17, 18, 19, 20, 1910.—J. F. F. WALTZ, *Secretary*, Decatur, Ill.

INDIANA.

The fifty-second annual meeting of the Indiana State Dental Association will be held in Indianapolis, May 17, 18, 19, 1910, at the Claypool Hotel. This promises to be a great meeting.—OTTO V. KING, *Secretary*, Huntingdon.

The Eastern Indiana Dental Association will meet on its thirty-ninth annual meet at Cambridge City, Ind., on April the 12th and 13th, 1910.—A. O. MARTIN, *Secretary*.

KENTUCKY.

The forty-first annual meeting of the Kentucky State Dental Association will be held in Louisville, Ky., May 26, 27, 28, 1910.

An unusually interesting and profitable program is being arranged for this year, and a cordial invitation is extended to all ethical members of the profession.—W. M. RANDALL, *Secretary*, cor. Brook and Broadway, Louisville, Ky.

MINNESOTA.

The next regular meeting of the Minnesota State Board of Dental Examiners will be held at the Dental Department of the State University in Minneapolis on March 15, 16, 17, 1910. All applications must be in the hands of the secretary ten days before.—DR. GEO. S. TODD, *Secretary*.

NEBRASKA.

The fifth semi-annual meeting of the Southwestern Nebraska Dental Society will be held at Oxford, Neb., Tuesday, March 8th. Dr. C. Woodbury will be with us. All ethical practitioners are invited to meet with us. W. A. MCHENRY, Nelson, Neb.

PENNSYLVANIA.

The forty-seventh annual meeting of the Lake Erie Dental Association will be held at Hotel Rider, Cambridge Springs, Pa., May 17, 18, 19, 1910.—V. H. MCALPIN, *Secretary*.

The annual meeting of the Susquehanna Dental Association of Pennsylvania will convene at the Oneonta Hotel, Harvey's Lake, May 24th, 25th and 26th, one week later than usual.

TEXAS.

The annual meeting of the Texas State Dental Association will be held at Houston, Texas, May 3, 1910. On May 4th, 5th and 6th the Association will hold a joint meeting with the Southern Branch of the National Dental Association at the same place. The profession is cordially invited to visit Texas on this occasion.—J. G. FIFE, *Secretary*, Dallas, Texas.

CANADA.

Canadian Dental Association and Ontario Dental Society combined convention, Toronto, Canada, May 31, June 1, 2, and 3, 1910.